EDUCATIONAL REVIEW

MAY, 1897

The sixth annual meeting of the Harvard Teachers Association was held at the University on Saturday, March 6, 1897. The papers and discussions dealt with various phases of the subject first named below.

I

THE RATING OF STUDIES IN COLLEGE ADMISSION EXAMINATIONS

I shall discuss this matter particularly with reference to Harvard College and the schools which contribute most largely to Harvard College. But I have this to say upon the general subject—that we now have to consider options offered by the schools and allowed by the colleges for admission, much more extensively than we had to consider them a few years ago. The most significant feature of the programmes put forth by the Committee of Ten is greater freedom, wider option. As soon as we allow options we must have relative values, in order that one subject may be readily exchanged for another.

Now, upon what basis shall the rating be made? I think that President Eliot a year ago suggested, *Upon the basis of the time spent in the schools upon the several subjects.* Many of us are inclined to favor that proposition as on the whole the most hopeful one (provided due allowance is made for the greater value of an hour in the later years, as compared with earlier years, of the school course). It puts aside the question of the relative educational values of the several subjects. It puts them all on an equality; begging the question, you may say, as to their relative value.

But before we accept the proposition to count everything according to the amount of time (or attention) devoted to it in the schools, it is well to have more definite information in regard to the practice of the schools than most of us have had. I have, therefore, prepared a table. [See pp. 420--421.] I propose to explain it, and to leave the discussion of it largely in your hands. All suggestions that I may make are put forth entirely on my own responsibility.

In columns I--V you will find an exposition of the methods of admission to Harvard now in practice. In the first column we have the relative weight now given to each subject or study. These relative weights correspond to the amount of time given to the various subjects in the admission examinations, except in the case of laboratory examinations. For instance, elementary English has two hours; we therefore count it 2; elementary Greek, two hours; advanced Greek (authors), two; advanced Greek composition, one hour; and so on down the list. No one student offers all the subjects.

The second column illustrates our method *a*—all the elementary subjects and two advanced subjects. Those two advanced subjects are usually Latin and Greek. They need not be these. They may, for example, be advanced French and advanced German, but commonly they are advanced Latin and advanced Greek, so that we get as a common case under method *a* that which is set down in column II. It sums up 16 points.

Method *b*, column III, omits one of the modern languages, usually German. It replaces that by one advanced subject, making three advanced subjects, and as the elementary subject omitted counted 1, while the advanced subject which replaces it counts 2, the total is 17.

Column IV illustrates method *c*, where Greek or Latin is omitted. Elementary Latin counts 2; elementary Greek counts 2; and if either is omitted, two advanced subjects must be put in its place. So in that column we find four advanced subjects, and the total of points is 18.

Finally, in column V, we have method *d*, which omits, we will say, German and Greek, and has five advanced subjects, making the total 19 points.

Certain questions are familiar to those of us who are in the habit of considering these matters, and I will state those questions in order to give definiteness to our discussion.

First, many of us believe that all of the advanced subjects are counted too high, or overweighted, by all of these methods. Second, some of us believe that Greek is counted too high in comparison with Latin. Third, some people believe that the substitute required for elementary Greek is more than equivalent to the Greek itself. (The substitute required for elementary Greek is one *mathematical* advanced subject, such as solid geometry and logarithms and trigonometry, which, taken together, make what we call one whole advanced subject—and one other advanced subject, which must be mathematics, physics, or chemistry. It is a very common belief that the substitute thus required takes more time in the school, or is harder to give, at any rate, than the elementary Greek which it is allowed to replace.) Those three questions, then, I shall ask you to have in mind: Whether the advanced subjects generally are overrated or overweighted, as compared with the elementary subjects. Whether Greek is overweighted, as compared with Latin. Whether the substitute for elementary Greek is more than equivalent to the Greek.

The data which I have used in making columns VI--XII were recently obtained for this especial purpose from twenty-one schools,[1] which present a large number of candidates

[1] The circular, requesting information concerning the amount of time given to each study in the last six years of the school programme, was sent to thirteen public schools and thirteen private or endowed schools. The public schools applied to were, in general, the public schools contributing most largely to the college. The private or endowed schools applied to were, in general, the private or endowed schools contributing most largely to the college.

Three of the schools addressed made no reply to the circular. Two sent replies too late for use in the construction of the table. The twenty-one schools furnishing the data used in the table are:

Adams Academy, Quincy; Boston English High School; Boston Latin School; Browne and Nichols's School, Cambridge; Cambridge Latin School; Cutler's

Names of Studies	Present rating	Common case under "method *a*"	Common case under "method *b*"	Case under "method *c*"	Case under "method *d*"	Number of schools offering the separate studies	Number of school recitation periods per year in each study; averages of data obtained from 21 schools						
							Last year before admission	Second year before admission	Third year before admission	Fourth year before admission	Fifth year before admission	Sixth year before admission	Totals
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII
English elem.	2	2	2	2	2	21	104	90	94	120	80	52	540
Greek elem.	2	2	2	..	..	20	..	162	171	39	..	..	372
" adv. (authors)	2 } 5	2 } 4	2 } 5	..	..	20	152	8	..	..	..	..	160 } 602
" " (comp.)	1	..	1	..	..	15	49	18	3	..	..	..	70
Latin elem.	2	2	2	2	2	21	7	132	166	175	99	61	640
" adv. (authors)	2 } 5	2 } 4	2 } 5	..	..	20	152	30	..	..	..	..	182 } 897
" " (comp.)	1	..	1	..	..	15	43	27	5	..	..	..	75
German elem.	1 } 3	1	..	1 } 3	..	18	20	122	75	39	16	6	278 } 477
" adv.	2 }	..	..	2 }	..	12	160	39	..	..	..	..	199 }
French elem.	1 } 3	1	1	1 } 3	1 } 3	21	19	105	95	51	33	26	321 } 507
" adv.	2 }	..	..	2 }	2 }	12	156	30	..	..	..	..	186 }
History elem.	1	1	1	1	1	21	18	87	57	75	31	26	294
Algebra elem.	1 } 2	1	1	1	1	21	12	79	58	116	37	7	309 } 535
Geometry elem. (plane)	1 }	1	1	1	1	21	69	56	73	19	9	..	226 }
Geometry adv. solid	1 } 2	..	..	1 } 2	1 } 2	11	72	..	..	..	..	..	72 } 151
Log. and Trig. adv.	1 }	..	..	1 }	1 }	14	79	..	..	..	..	..	79 }
Algebra adv.	1 } 2	..	..	..	1 } 2	10	95	..	..	..	..	..	95 } 171
Geometry adv. (analytic)	1 }	..	..	..	1 }	4	76	..	..	..	..	..	76 }
Physics elem.	1 } 3	1	1	1	1 } 3	21	127	54	14	11	3	..	209 } 479?
" adv.	2 }	..	..	..	2 }	2	270?	..	..	..	..	..	270? }
Chemistry adv.	2	..	..	2	2	9	158	21	..	..	..	..	179
Totals	..	16	17	18	19	..	..	..	..	..	..	..	..

| Totals obtained by giving to each last year hour a weight 10 " " 2d " " 3d " " 4th " " 5th " " 6th | Numbers in column XIV divided by 1000 | Totals obtained by giving to each last year hour a weight 9 8 7 6 5 " " "

every year for admission to Harvard College. I have taken the data and have made an average for each subject. In making this average, I have given just as much weight to a school which sends five boys a year as to a school which sends twenty-five boys a year. It seemed to me that, on the whole, this was the fairest thing to do; it certainly was the easiest thing to do. We get in this way the judgments of twenty-one different school principals or school boards—whoever the people may be that regulate the programme of the school. We take the average judgment (as shown by the average practice). That average practice is represented in columns VII--XII inclusive.

Column VI tells the number of schools offering the particular subject. For instance, twenty-one schools—all of them—offer elementary English. Twenty offer elementary Greek, not always, but at times—generally. Twenty of them at times offer the advanced Greek (authors). Only fifteen of them are in the habit of offering the advanced Greek composition. All offer the Latin; all but one the advanced Latin. Down the list the numbers become smaller. Only four of them are in the habit of offering analytic geometry. Only two are in the habit of offering advanced physics; so I have attached an interrogation point to the averages obtained in the case of that study, the basis of the average being so small.

School, New York; Durfee High School, Fall River: Groton School, Groton. Harvard School, Chicago; Lowell High School; Newton High School; Noble & Greenough's School, Boston; Phillips Academy, Andover, Mass.; Phillips Academy, Exeter, N. H.; Portland High School; Rogers High School, Newport; Roxbury Latin School; Sachs's School, New York; Saint Mark's School, Southborough; Somerville High School; Worcester Classical High School.

These twenty-one schools sent nearly sixteen hundred boys to Harvard College during the years 1886–95.

The most important parts of the circular issued to the schools were the following paragraphs:

"The information expressly asked for is the number of *school periods per year* for each of the studies mentioned, including recitations, lectures, and laboratory work, but not including hours of preparation for these exercises."

"Some of the facts called for will evidently be a little difficult to give; for instance, the division of time between elementary Latin and advanced Latin. Perfect accuracy in such cases, or in any of the cases, is not expected, but only a fair estimate."

If we now begin at the top with English, you will see, from VII, VIII, IX, etc., that English is studied, in some schools at least, every year for the six years previous to admission. Elementary Greek is studied not at all in the last year in any of these schools. It is studied in the next to the last year, and still more in the year before that; then very little in the fourth year, and not at all in the fifth and sixth years before admission. Greek composition is studied mostly in the last two years, especially in the last year. As we go down the list, we find similar features in the other subjects. For instance, Latin—the last two years. If we come down to the mathematical advanced subjects—solid geometry, logarithms and trigonometry, advanced algebra and analytic geometry, we find them taken only in the last year. That fact must be borne in mind in estimating the amount of attention given to them. It is evident that an hour of the last year is worth a good deal more than an hour of the earlier years.

In column XIII we have, summed up, the number of recitation periods given on the average to the individual studies in the six years previous to admission to college. These recitation periods differ in the different schools; they vary from half an hour to fifty minutes, an average, perhaps, of forty-five minutes. We find for elementary English, 540 (possibly a slight overestimate); for the elementary Greek, 372; for the total Greek, 602, etc. The total Latin, you will observe, is 897, as compared with 602 for the total Greek. That bears upon the question whether the Greek is now overweighted, or overcounted, in comparison with the Latin. The Greek and the Latin count alike in admission. For the Greek we have 602 hours; for Latin, 897; but we must not decide at once from those figures, for the Greek ordinarily comes a little later in the course than Latin. I will not go farther down the list, except to call your attention to the very small total for the advanced mathematical subjects. I was surprised to find how small an amount of time is required for the advanced geometry and

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logarithms and trigonometry, and also for the advanced algebra and analytic geometry, when these subjects are given.

Now the question comes, How shall we assign weights for the different years? It is very evident that an hour of the last year of the high-school period is worth a good deal more than an hour of the first year. I have here three different schemes set forth in columns XIV--XIX—schemes for weighting the different years. You will observe as to column XIV that it is made in this way: Multiply the numbers in column VII by 10; the numbers in column VIII by 9; those in column IX by 8; those in column X by 7, and so on. We begin with 10, and we end with 5; so that an hour in the first year of the ordinary four-year high-school course is by this method made to count seven-tenths as much as an hour of the last year of the high-school course. We get the totals by adding these various products. Those totals are very large, and so for column XV I have reduced them by dividing by 1000, that number simply being used for convenience. We find that, upon this method of rating, the attention given to English is 4.2; the attenti n given to elementary Greek is 3.1; the total Greek, elementary, advanced (authors), and advanced composition, 5.4. The total Latin, 7.2; total German, 4.3, etc.

But I am not quite clear that this makes the last year important enough in comparison with the first year, so in column XVI a different scheme is taken. I have taken a scheme which makes an hour in the first year of the ordinary high-school course count four-sevenths as much as an hour of the last year. Again, multiply columns VII, VIII, etc., by certain numbers, beginning with 7 and running down to 2; take the sum of the products, and get column XVI; divide by 650, merely to reduce to small numbers, and get for the relative weight or attention given to English, 4; to Greek (total), 5.5; the change here has been very slight in relative importance. For total Latin we get 7, and so on.

Even now I am not sure that I have gone far enough to

satisfy everyone, so I take one step more, and take numbers from 6 to 1. This makes an hour of the first year of the high-school course count just half as much as an hour of the last year. Multiplying columns VII, VIII, etc., by the numbers 6, 5, 4, 3, 2, 1, and taking the sum of the products, we have column XVIII. Divide by 500, merely for convenience, and we have as the relative attention paid to these subjects in the schools: for English, 4; for total Greek, 5.9; total Latin, 7.2; total German, 4.7, etc. The estimated relative attention given to the advanced mathematical subjects is rising, you see, because we are all the time multiplying the later years by the larger numbers, and these mathematical numbers are taken in the later years.

I am inclined to consider column XVII as being on a better basis than column XV or column XIX. That column, XVII, gives to one hour of the first year of the ordinary high-school course a weight of 4, and to an hour of the last year a weight of 7. But you will see that the numbers in columns XV, XVII, and XIX are not exceedingly different.

Finally, I have put in column XX a suggested scheme of ratings, which I put forth as agreeing fairly well, though not perfectly, with the relative attention given to the subjects in the schools. If we are to count by the time given in the schools, making a certain allowance for the later years as compared with the earlier years, a study of this table leads to something not very different from this last column, which would count elementary English 4; elementary Greek 3; advanced Greek (authors) 2; advanced Greek composition 1; would count Latin 4; advanced Latin (authors) 2; advanced Latin composition 1; would count elementary German 2; advanced German 2; elementary French 2; advanced French 2, and so on down the list. The greatest divergence between the indications from the schools and the suggestion in the last column is in the case of the advanced physics; this has, in column XVII, 2.9, in column XIX, 3.2; and yet I have put down here for that subject the weight 2, no greater than the weight given to the ele-

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mentary history, for example, which is represented in column XV by 2.3; in XVII, 2.1; in XIX by 2.2. I suggest that weight for the advanced physics, in spite of the large number of hours given to that study in the schools, partly because the number of schools offering it is so small that we cannot put implicit confidence in the average obtained, partly because I think the work in that course is almost exclusively laboratory work. There is probably less outside work connected with the advanced physics than with most of the other subjects. And, again, it will be inconvenient for us in admitting to college to count advanced physics as more than advanced Latin, for instance; for we count them the same in college. That is, advanced Latin corresponds to one " course " in college, and so does advanced physics. We could not very conveniently count the advanced physics as 3 for admission, and advanced Latin as 2 for admission. It is probable, however, that advanced physics is the most formidable of all the advanced subjects, partly from the laboratory equipment it requires, and partly from the amount of time and special training it requires on the part of the teacher. At any rate, it is observable that very few schools offer it.

Perhaps I should say a word more in regard to the estimates for the advanced classical subjects. It is very difficult for any teacher to separate the amount of time given to the advanced Latin from the amount of time given to the elementary Latin, and it is probable that the estimate of hours for advanced Latin, both authors and composition, and so for advanced Greek, is smaller here than it should be; but if it were made larger it would be made so at the expense of the elementary Latin or Greek. If we added to the estimate of the time taken for advanced Latin and advanced Greek, we should have to take away from the elementary Latin and Greek hours to do it, so that the total given to the Latin, the total given to the Greek, would not be affected.

Our present method of admission to college counts Latin

and Greek the same, and the boy that offers elementary Latin, advanced Latin (authors), and advanced Latin composition, gets no more credit for these subjects than for the like subjects in Greek. But the amount of time given to the Greek is very much less than the amount of time given to the Latin; and with any reasonable weighting or estimate of the years, the attention given to the Greek is decidedly less than the attention given to the Latin. I don't see how we can escape the conclusion that the Greek is overweighted in comparison with Latin.

The table seems to me equally conclusive upon the question of advanced subjects in general as compared with corresponding elementary subjects. Our present counting, as set forth in column I, greatly overweights the advanced subjects. Accordingly, the twentieth column is made revolutionary in regard to the advanced subjects. For instance, advanced French counts twice as much as elementary French in column I. In column XX it is proposed to count it the same as elementary French. In column I, solid geometry and logarithms and trigonometry together count 2; elementary algebra and elementary geometry together count 2. In column XX the elementary algebra and geometry count 4; and the solid geometry and logarithms and trigonometry count 2. I have cut in two—divided by 2—the *relative* weights now given to the advanced subjects, as shown in column I.[2]

[2] The third question raised by myself, as to the equivalence of elementary Greek and the substitutes now accepted for it, I did not undertake to discuss at the time. No one familiar with Harvard matters needs to be told that the ease or difficulty which should attend admission to college without Greek is a burning question. Champions of Greek, looking at the table here presented, are likely to sum up the number of hours given to all the advanced mathematical subjects, 322, and the number assigned to elementary Greek, 372, and say, as one of them has said to me, "Your table shows conclusively that the substitute for Greek is no harder than the Greek." I believe that this conclusion gives scant weight to three important considerations—two which have been already mentioned, but may be repeated, and a third which has not yet been set forth. The first consideration is that the advanced mathematical subjects come in the last year of the course, whereas the maximum study of elementary Greek is in the second and third years before admission. The second is that the time assigned in the table to elementary Greek probably includes some time really given to advanced Greek. The third is,

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Now, I hope that before the discussion ends, or is at its end, we may have a vote from the teachers who have had experience in this matter, as to which of these columns, XV, XVII, or XIX is on the best basis. Perhaps some of you would propose a different method of weighting the various years. It is evident that you cannot give to a period in the first year the same weight as to a period in the last year. But how will you weight them? I have taken three simple ways of weighting; in column XV, beginning with 10 and running down to 5 regularly; in column XVII, beginning with 7 and running down to 2 regularly; in column XIX, beginning with 6 and running down to 1 regularly. Which of those methods is the best, and is there a better method than any one of them?

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as teachers of experience will tell anyone who inquires, that the advanced mathematical subjects are offered by few boys, and these few are boys of more than ordinary ability for mathematical study.

II

SCIENCE IN THE SCHOOLS

If the average citizen, interested in public education, were asked what he understands by "Science in the schools," he would probably answer: "Botany, or physics, or chemistry." In contrast to this view, I wish to emphasize the dependence of true science rather on method than on subject. The essence of science is not that it deals with plants, animals, forces, elements, or compounds, but that *it leads to demonstrable knowledge*. Any subject that may be treated so as to lead to demonstrable knowledge is to that extent scientific. On the other hand, however thoroughly a subject, such as geology, is associated with "science" in the public mind, it may be so taught as to lead the student, at best, to nothing but demonstrated knowledge; and if so, it is, as far as the student is concerned, not science at all, but rank empiricism. A boy may learn the statement that the Colorado cañon has been carved by water and weather, without any appreciation of the strong argument that demonstrates this conclusion; and this is as if he learned that the sum of the angles of a triangle equals two right angles, without studying the logical demonstration of that valuable theorem. It may be well for him to acquire much information in this way, and I shall not for the moment consider what proportion such empirical knowledge should bear to scientific knowledge in his entire education; but neither of these statements about the cañon and the triangle, supported solely by the authority of text-book or teacher, adds to his scientific training or acquaints him with the essence of science.

The essence of scientific study is its dependence on reason and its independence of individual preference or prejudice. The result of simple, direct observation is scientific, if the

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facts reported come entirely within the reach of observation. For example, the clear sky is blue; the bright part of the moon waxes and wanes. Likewise the results of observation under the special conditions of simple experiment are scientific. Quartz is hard. Water is less compressible than air. Logical argument based on assumed conditions instead of on observation is scientific; as when the geometer postulates the conditions of a problem and works out its conclusion: but manifestly the training gained in this kind of science is of a very different kind from that gained from observation or experiment. Such terms as pure, physical, and natural science are, therefore, often used to indicate different classes of demonstrable knowledge to which the above examples belong. Besides these classes we hear of linguistic and historical science, and various other kinds which I shall not here consider.

The difficulty of scientific study advances when some of the conclusions that it reaches are not discoverable by direct observation or experiment, but require for their discovery a maintained process that may be called investigation. Elaborate investigations have proved that heat is not a thing added to a cold body to make it hot, but the energy of molecular agitation. Likewise it has been shown that radiation is not corpuscular, but is accomplished by some manner of undulation in a highly elastic medium. Here we have to do with existing but invisible processes. Again, it has been demonstrated that stratified rocks, such as bedded shales, were deposited from suspension in water, and that crystalline rocks, such as basaltic lava flows, have cooled from a state of fusion. Here we have to do with processes that might have been observable enough at their time of action, but which are now long past.

Demonstration in investigations that involve ancient or invisible processes is a much more serious, but not a more scientific, undertaking than the counting of the number of legs on spiders and grasshoppers, or than the arguing that vertical angles are equal, and this brings me to the pith of what

I wish to say; namely, that scientific studies should be classified as elementary and advanced, according to the nature of the mental activities that they involve. To make this more clear, let me state briefly what seems to be the essence of a well-ordered scientific investigation of relatively advanced grade, and then point out how approach may be gradually made toward it.

The first steps in investigation are observation and description. Many facts are thus brought to our attention. The next steps are classification and generalization, whereby facts of a kind are placed together and recognized as individual members of a group; typical and individual features being discriminated. At any stage of the process thus far, inquiry may arise as to the meaning or explanation of the facts, and invention is then exercised to provide some way of accounting for them. When inquiry is planted on a field of previously accumulated, pertinent knowledge, invention flourishes; but it may spring up in an unexpected corner of the field at an unexpected time. Anyone who has tried to find out the explanation of a puzzling problem must know how little he can command his inventive power. It often proceeds as "unconscious cerebration," and furnishes him with a ready-made suggestion when least expected. The fruit of invention is hypothesis or theory; and this is nothing more than a formal attempt to state the unseen facts, which, together with the observed facts, shall make up the whole phenomenon and lay bare its explanation. The theory being stated, proof of its validity is asked for. Proof is gained only by making a logical deduction of all the consequences of the theory, and then instituting a deliberate comparison of the deduced consequences with the relevant facts. If the agreement is perfect, the theory stands; if imperfect beyond remedy, the theory falls. Nothing short of observation, generalization, invention, deduction, and comparison will lead the investigator safely through the dangers of mistaken belief.

In simple problems, involving no unseen facts, the whole

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process of investigation may be reduced to observation alone—this leaf is green. An extension of observation permits generalization—most leaves are green; the sun rises and sets farther south in winter than in summer. Certain problems involving experiment and explanation may be treated so directly that, in the very statement of the explanation, the consequences and the facts are compared with hardly a conscious effort—the properties of the lever offer a good illustration of this stage. But as soon as problems of any intricacy are reached, every part of the process of investigation must be attended to carefully and consciously, if the work is to be rated as scientific.

Now, as far as science in the schools is concerned, we need a careful selection of problems from various subjects, arranged in advancing order, so that the real nature of investigation and proof shall be laid before the student in the high school and college. Due care should be given to the selection of problems that shall have the greatest amount of informational value. By classifying similar problems, much information may be given in the form of corollaries, under the type problem of each class, only one member of which is demonstrated by methods appropriate to its grade.

A valuable result of scientific study is the exercise that it gives to various mental faculties, all of which should be well developed in the broadly educated man. His observation should be quick and precise, well guarded against subjective errors. His experimental skill should reach a fair delicacy of manipulation. His power of description should rise to the level of accurate and terse statement in reasonably elegant form. His ability to generalize should be as well practiced as his ability to add and subtract. His awakened spirit of inquiry should arouse an agile inventiveness, nimbly leaping about through the more or less conscious memories of a well-stored mind. Reasonable skepticism—in its literal sense—must prevent his immediate acceptance of an invented theory. A keen use of logic must enable him to deduce all the consequences of the theory; a fair spirit of com-

parison must impel him to confront the deduced consequences with the generalizations induced from observation; and, at last, a watchful judgment must urge him to deliberate on their measure of agreement. A verdict of acceptance or rejection of the theory is then rendered without prejudice, and belief is altogether independent of preference. If exercises of these many kinds can be provided in connection with subjects that afford inherently useful information, so much the better; and I fully believe that they can. But if they could not I would still urge that every scholar in our schools should have some introduction to the rational, scientific method of investigation in some attractive field of study, just so that he may learn how to think.

The time may come when a special prescription will be made for each pupil to build up such faculties as are too little developed. If a boy is observant at fourteen, but illogical, he might study geometry. If logical, but unobservant, he might study mineralogy. If a boy of sixteen shows little power of "explaining things," let him be assigned problems whose solution involves easy invention and proof. If a youth is too prone to accept any haphazard solution that may be offered for a problem, let him be given tasks in which deduction and comparison are conspicuous elements. I do not mean by this that native powers should be neglected; on the contrary, they should be developed to the utmost, for it is in their direction that the boy will make the most useful man—or the girl the most useful woman; but education should also do something in the way of balancing up a lopsided head.

I have lately been particularly interested to inquire into the possibilities of geography, meteorology, and astronomy with regard to the scientific training as well as to the useful information they may afford in secondary schools, and it seems to me that they all have high values in both directions. Astronomy is the least "useful" of the three, but it stands above the others in the majestic quality of its elementary problems. Geography is at first sight hampered by the small

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amount of direct observation that it affords to most school children; but such is the verisimilitude of pictures, photographs, maps, models, and other illustrative material now or soon to be accessible in schools that I do not believe geography will suffer seriously in this respect; moreover, here as in many other subjects, much investigation must be based on observations not made by the investigator; observation is a very small part of scientific study, and it is a serious mistake to think that a scientific student must not base any of his work on the observations of others. All three subjects may be treated in high schools, as well as in colleges, in such a manner that their type problems may be analyzed into various stages of investigation as consciously as a chemical compound may be analyzed into its elements; and in this grade of teaching I believe that conscious analysis of method may be advantageously introduced, however silent the teacher should be as to the mental faculties while working with pupils in the lower grades.

Let me here say, emphatically, that a conscious analysis of method is a most harmful process in the mind of a teacher who has " learned " the methods of science by precept rather than by example. I do not believe that there ought to be any independent instruction in methods of scientific study; but that the intending teacher should, in the later years of preparatory study, be continually brought face to face with the quality of scientific work by his instructor. If room should be found in these later years for a course in scientific methods, I should at once use that time by putting in more science, not by teaching methods in the dry way. Nothing can be more deplorable than to allow a pseudo-scientific teacher to set forth the quality of the true scientific method; to descant on the value of invention and deduction and proof, without having himself gained a living knowledge of these processes by actual experience with them, instead of with their names.

Geography in particular will be benefited by scientific treatment, in contrast to the empirical treatment that it has

long suffered under. Not only are land forms, the natural scenery of history, susceptible of rational explanation, but the manner of man's inhabiting the earth may also be reasonably treated. A robin's nest may be studied, as to construction and location, and afterward the habitations of man may be likewise treated, much to the enlargement of the understanding. Very few young pupils ever imagine that the making of a tent or hut is to many races of mankind almost as much a matter of habit and as little a matter of originality as the making of a nest is to a robin; and that the variety among houses in civilized nations of to-day is a very modern innovation. A colony of swallow nests in a sand-bank suggests a cluster of houses in a village; and the reason for their location and the manner of their grouping in both cases deserve brief attention as natural phenomena susceptible of observation, description, generalization, and provisional or final explanation. Roads are particularly responsive to environment, both as to the needs that call for their construction and the physiographic controls of their location. Railroads are even more dependent on the form of the land that they traverse. Just as a robin takes advantage of the crotch in a tree trunk to build its nest, so a man takes advantage of a hill or cliff as protection for his primitive dwelling, of a harbor for his fishing boats, of a notch for his road across a ridge, of the neighborhood of a ford or of rapids for a village site. He is enslaved to physiographic conditions in his occupations and industries, every one of which is based at foundation on natural resources, and bidden or forbidden by climatic controls. There is hardly to be imagined a category of geographical phenomena that is not open to reasonable, explanatory, scientific treatment, and the future of geography plainly depends on the displacement of the old-time memorizing of names and places, that makes for stupidity, by rational study that makes for intelligence. Apparently arbitrary boundaries, such as those so often run on parallels and meridians in our country or in Australia, really exhibit the advantage that we have

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taken of the form and motion of the earth in quickly parceling out lands newly opened to settlement; this may be observed as a habit of the animal, man, under certain peculiar conditions, and thus studied just as scientifically as the habits of web-spinning spiders or comb-making bees may be studied in another department of natural history. When explanations in teaching geography are given, the quantity of facts will be decreased to a much lower limit than obtains when memorized recitations are accepted; but the quality of the facts will rise to a much higher grade, and the profit to the student will be vastly increased.

It may be objected by some that the problems of geography are not susceptible of rigid demonstration, because they are not reducible to numerical or geometrical treatment, and that for this reason they should not be classed as scientific. But it may be fairly contended that this objection strains the definition of demonstration and of science. Geology is a science, although its conclusions should be regarded as extreme probabilities rather than as direct and rigid demonstrations. Take the case of stratified rocks containing marine fossils. The old hypothesis that the strata were hurriedly deposited from a flood and that the fossils are sports of nature is to-day displaced by the hypothesis that the strata were deposited from suspension in water with relative slowness, layer on layer, and that the fossils are true records of animal life during the time of deposition. The latter hypothesis has passed beyond the stage of inquiry to the stage of universal acceptance; and its conclusion as to the nature of past processes of deposition has taken a place among the well-established facts of modern science; not because the processes were directly observed, nor because their "demonstration" involves any rigorous mathematical argument, but only because its inferred conditions are shown to be closely accordant with the present order of nature, because these conditions are entirely competent to produce the observed results, and because the counter supposition is shown to involve extreme difficulties and improbabilities.

So with the geological and physiographical problems involved in the glacial theory. Innumerable facts of widespread observation are generalized. They lead to so curious and so complicated a series of phenomena concerning rock striations, erratic bowlders, and drift deposits that any reasonable process that can closely account for them is taken to be excessively probable and essentially correct. Any theory whose consequences can match such a complicated array of peculiar facts is held to be a good theory, because the possibility of matching by chance is inherently improbable; hence the correctness of the theory is shown to be excessively probable, and this is accepted as its demonstration. So with the origin of bays, like Chesapeake, by the submergence of broad valley floors. This simple explanation is so far superior to its predecessors—the erosive action of the sea or of glaciers—that the occurrence of the bay is now taken as proof of the postulate of submergence. Yet submergence is only shown to be excessively probable. It is not directly observed as a process; but its consequences match so nicely with the existing facts that all are agreed that submergence actually happened.

In geographical problems, the location of settlements and the growth of cities at the head of navigation on rivers are repeatedly noted. By putting together all relevant facts it comes to be believed, in explanation of this habit of man, that settlements have been made at such localities because of certain advantages that they have over others; that cities have there grown up because of the persistence of these advantages. Yet this belief is based only on an explanation of extreme probability, for we cannot possibly secure direct evidence of the reasons that led one individual after another to live in these cities instead of going elsewhere. When we see the scanty population of a cliffed seacoast, it is explained as a result of the difficulty of maintaining maritime activities on so inhospitable a shore. The sufficiency of the demonstration in this elementary problem will depend largely on the fullness of knowledge in the mind of teacher and student

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regarding the facts of geographical environment, and regarding the habits of mankind. One who is poorly equipped with this preparatory knowledge may contend that the explanations offered are insufficient, and that other explanations may be equally probable; but no hesitation will be felt by another who has walked along the crest of a sea cliff, and appreciated the consequences of its form, and who has at the same time learned from observation of many races in many regions how incessantly the habits of men and their manner of living are determined by the advantages that they bring; to him the explanation is sufficient.

Wherever a geographical fact is well accounted for, wherever good explanation comes into geography, we may be sure that someone has observed, generalized, invented, and proved his work. If his results are blindly accepted and blindly taught, the scientific element in them is lost; hence the competent teacher must be able to retrace the method of investigation in a good number of simple examples, and set it clearly before the scholars, so that both teacher and scholars may really appreciate and enjoy the study. Here enters the responsibility of the normal schools, to give to their intending teachers of geography a strong understanding of the nature of scientific inquiry by actual exercise on a good number of illustrative examples; and at the same time to give them a broad insight into the real nature of land forms, climate, and other factors of our physiographical environment, along with a fair acquaintance with the natural history of man. To the teacher thus equipped the study of geography—the earth in relation to man—becomes at once scientific and delightful. Geography, thus presented, will not be regarded as a dull subject by the pupils in the schools.

Quite as much may be said for meteorology and astronomy as for geography; but it should be noted that while geography, as above outlined, does not require some other scientific study as a preparation, meteorology rests on physics, and astronomy calls for a knowledge of geometry. All these studies are valuable in themselves, in one degree or

another; all may afford excellent training in real science. Their values, thus estimated, support the claim that the best method of assigning numerical counts to different subjects, when such reckoning is necessary, is by the time devoted to them. They are all so valuable, when well taught, that no fair discrimination can be made among them.

WILLIAM M. DAVIS

HARVARD UNIVERSITY

Principal Daniel S. Sanford of the Brookline High School opened the discussion as follows:

Without doubt very much of the science teaching in the lower schools has been purely empirical, wholly unscientific. Chance impressions, scraps of information loosely strung together to form brief courses in all the natural sciences; in short, the accumulation of facts rather than fact-interpretation was, perhaps, the natural practice in a schoolroom where the teacher himself had no scientific training. And yet I think any candid observer of the elementary schools must acknowledge that this stage in science teaching is being left behind. The laboratory is a recognized part of the equipment of the secondary school; it has been provided for in some of the most recent grammar-school buildings; and, so far as my own observation goes, there is no class of teachers to-day who are more thoroughly trained than the teachers of natural science.

With the improved methods, however, there comes the danger of going to the other extreme and of putting too much emphasis upon exact experimentation. A university professor, who is making an extended study of the introduction of natural sciences into the elementary schools, when recently asked what he regarded as the chief fault of the movement, made the wholly unexpected reply: "The attempt to make it all laboratory work." And a celebrated physicist with whom I was talking recently, who is himself an investigator and discoverer of note, spoke most emphatically in condemnation of the too early introduction of quanti-

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tative work in the elementary schools. I think everyone who has attempted to direct this early work in science must have learned that there is a very large class of pupils to whom this exact experimentation does not appeal. For them, the facts of the science—the results—are of supreme importance. There is another class, perhaps a still larger class, to whom it is not the method—it is not the abstract result—it is the result applied—it is the result as achieved by man—the discovery made by the discoverer—that interests. Fouillée, a French writer upon education, makes a most eloquent plea that natural science for the young, at least, should be humanized. He says "Great theories, instead of being lifeless and anonymous abstractions, should be human, living truths, each with its own history, like a statue by Michael Angelo, or like a picture by Raphael."

It is a popular notion at the present time, coming to us directly from the university laboratory, that all physics teaching in the lower schools should be quantitative—should consist of exact mathematical measurements. All the laws of nature are to be rediscovered, and by mere children. In natural history they are to study intensively, and as original investigators, but a limited portion of the subject. I have followed teachers who have been imbued with this idea. Their classes begin studying with the microscope, say the amœba. They work conscientiously, perhaps enthusiastically, for a half-year, and when the course terminates, they have not climbed the ladder of life far enough to catch sight of the first vertebrate. We must not allow the microscopic study of a tissue to crowd out of the elementary school the larger facts of the science.

As to Professor Davis's illustration concerning the tides, I may say that I have seen numerous attempts in the elementary schools to teach the influence of the moon and sun upon the waters of the earth, but I do not recall a single instance where the pupil arrived at the truth through his own efforts, or without the aid of a very large measure of faith. I am not sure

that I ever saw a teacher who, independently of the statement of the text-book, fully grasped the theory of tidal action. This does not prove, however, that it is not possible, under the direction of so skillful a teacher as Professor Davis. Bagehot tells us, speaking of history, that youth has a principle of consolidation; the whole comes to us in childhood, the details later; afterwards we learn the accurate littlenesses. "Those who begin late, learn only these." "But the happy first feel the mystic associations and the progress of the whole." For this reason, children should be introduced early to the large facts of the natural sciences, that they may acquire some sense of the proportions before they are given the exact training in experimentation which we all agree is desirable. This does not exclude progressive training in careful observation of some slight attention to quantitative as well as qualitative results. Either extreme is a mistake. If the purely empirical method is inadequate —and who can doubt but that it is?—the wholly scientific method for young children, or for pupils even in the secondary stage of their education, is unsatisfactory and inadequate. The school courses should represent a judicious combination of information and training. This is especially necessary, if we are to realize the indirect results in oral and written expression to which Professor Davis alludes; and, if proper introductory lessons could be given in the elementary schools, I am quite sure that we should be ready for such courses as he recommends—courses where the facts of the science, as matters of information, shall be subordinated to the scientific training that comes from the study of those facts. At the present time such introductory courses are not generally to be found in the elementary schools. So far as my observation goes, also, there are no such secondary school courses, as he recommends, recognized by the colleges for admission. In saying this, I do not forget the Forty-Experiment course for Harvard. It seems to me that that is to be criticised for being too rigorously scientific. Its experiments are made up almost en-

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tirely of quantitative work. The *method* is unduly emphasized. The proportions are not observed. It gives the pupil no perspective view and comprehensive knowledge of the subject. And, finally—and this seems to me to be the most serious charge—it is not a course which is calculated to inspire a many-sided and permanent interest in the subject. And this objection makes it wholly unfit as a course for a public high school, where the majority of the pupils are not going to college, and where no subject should appear which is not to be valued because of its own intrinsic worth, quite irrespective of its value as a means of training for subsequent academic courses.

I suppose I should speak of secondary schools in general. I prefer to speak of the class of schools that I represent. In such schools—public high schools—the preparation for college cannot be the primary consideration. The development of a school which shall properly supplement and complete the school system of which it is a part, is an obligation superior to any other that rests upon us. It is far more important that we should establish the right connection with the elementary school than that we should meet the exactions made upon us by the higher institutions. I cannot conceive of any principle whereby may be justified the suggestion that is so frequently made nowadays, that we shall simplify our problem, relieve the congestion in the secondary schools, by thrusting down into the elementary schools certain subjects, solely for the purpose of better meeting the requirements of the higher institutions—requirements which are dictatéd by persons who are far removed from the problems of elementary education, and who do not and cannot correctly understand the needs of the elementary schools. There is a limit to this stuffing process. It is not "enrichment" in any sense of the term. While we may recognize, welcome, and profit by suggestions from without and from above, we must remember that education is evolution. It is an unfolding from within outward. It is growth from below upward, and, in the determination of admission re-

quirements, it is far more reasonable that the college and the university shall look to the schools than that the schools should look to the university.

Because this is so, I like very much Dr. Hall's proposed scheme of rating. It is to be commended, because it substitutes a rational method of estimating values for an arbitrary one. It is based upon the experience and practice of twenty-one different representative schools. As explained by him, the advantages are obvious. To give a single instance—according to the existing rating, Greek, which takes 602 hours, is allowed 5 units of value. Elementary mathematics, which takes 535 hours in preparation, on the average, is allowed 2 units in value. There is a difference of 60 odd hours only, and yet Greek is rated at 2½ times the value of elementary mathematics. Dr. Hall's scheme proposes six units for Greek and four units for elementary mathematics. That is, Greek is to be estimated at 1½ times the value of mathematics.

Another good thing about this scheme is that it gives a greater prominence to English than any other plan that has been devised. Four units are allowed for English—a far greater value, relatively to Latin and Greek, than is usually accorded, and one which is more commensurate with its importance. Some slight knowledge of the requirements of the Chicago University entrance examinations enables me to make a comparison which, however, necessarily lacks accuracy because of the difference in the conditions involved. In Dr. Hall's plan, I should say that English and physics are rated higher than at Chicago University; history and modern languages relatively lower. History still seems to me to be underrated—a fact which is, perhaps, to be in part explained by reason of its being offered earlier than some of the other subjects. Two units are accorded to elementary history; two units are accorded to advanced mathematics. Elementary history certainly consumes far more time in preparation than the advanced mathematics can do.

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But, after all, this scheme only improves, and therefore, perhaps, prolongs the life of a system which is radically wrong. It does not strike at the root of the difficulty. The time allotted to these various subjects in the preparatory schools is predetermined by the emphasis that is put by the college upon them. There is no democracy of subjects here, where all have equal rights. The old aristocracy still reigns. Latin and Greek are still the tyrants. They are the time-consuming subjects, and one feels like asking why it is that 900 hours are still required to meet the advanced requirements for Latin at Harvard.

There are a great many questions one would like to ask. Why is it that Latin and Greek should not be begun in the college, as well as French and German? Why should there not be an opportunity at least to begin them there? Or, if that is too radical, and if the college instructors are unwilling to begin with *amo* and ὑω λ, why should not students be admitted to college on two years' preparation in Latin and one year's preparation in Greek? That is an arrangement which would make for simplicity and unity in many of the secondary schools. Certainly, it would restrict the prohibitory power of those two languages in the case of pupils—and there are many such—who, late in their school course, determine to go to college. It is unendurable—it is monstrous—that a boy who has been studying for four years conscientiously, and along well-directed lines, should find, at graduation from the public high school, that he is unqualified to enter college to the extent of four years of Latin, and to the extent of three years of Greek. Now, wisely or unwisely, certainly not unreasonably, when we consider the practical demands of life, a very large percentage of the pupils in our public high schools are showing a preference for courses which are distinctively modern, and it is a significant fact that, keeping pace with this tendency, there is a growing conviction, even among conservative educators, that these subjects, when studied seriously and for a sufficiently long period of time, are not inferior as culture

subjects—are not inferior as a means of intellectual training. So I am urging what you have so frequently heard urged from the standpoint of the English high school.

Dr. Hall's scheme of rating is then simply a palliative. It is an improvement upon the present system. It does not, however, give promise of any permanent relief. We are all awaiting the new requirements with interest and hope. We believe that there must be a fuller, more generous, recognition of modern subjects.

In conclusion, I will only add that it is my conviction that in many of the secondary schools to-day the best courses—courses which have been developed quite independently of the college and its influence—are those which are either wholly ignored, or are only partially recognized by the present admission requirements.

Dr. Frank A. Hill, Secretary of the State Board of Education, spoke as follows:

I was asked to say something about manual training, about its educational value, about its rating, if it ought to have any, in a scheme of college admission requirements. I have looked over very carefully Professor Hall's table, and I do not find manual training mentioned anywhere in it. Perhaps what I am about to offer will be in the nature of heresy. If so, the heresies of one time may possibly become the accepted views of another time.

Professor Hall has invited us to sit at his table. I do not find any plate here for me. Here I am—an unexpected visitor, an unwelcome visitor possibly—but if I may sit at a side table, or in the kitchen, for a few minutes, perhaps I may do so without opposition. Let me say, however, that I regard Professor Hall's table as an exceedingly instructive, clear, and valuable presentation of a situation, and of an improvement upon that situation. I like, in particular, the drift in this direction—toward increasing the relative values of the elementary subjects. For instance, in column I elementary Latin ranks as two-fifths of all the Latin; whereas,

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in column XX elementary Latin ranks as four-sevenths. Now, four-sevenths is the larger fraction, and the movement that it indicates is a movement, I think, toward relieving to a slight extent some of the burdens that rest upon the humbler high schools of the Commonwealth and the humbler high schools elsewhere.

But, returning to my theme, manual training, let me say that I regard it as a sound proposition that a course of study in a high school that is four years long, and that is thought to be suitable to fit pupils, as the expression goes, for the work of life, ought to be good enough—is good enough, if faithfully and successfully pursued—to fit those pupils for admission to college. I think that the educational drift toward this proposition in this State, in New England, in the country, is clear and unmistakable. Think of the considerations that favor this proposition. There is the astonishing growth of our high-school system; I fear that we do not realize that. Then there is the duty that the higher institutions owe to the secondary schools—to foster their departments, to inspire them to better work. Then there is the folly, as it seems to me, that the higher institutions would show if they should persist in adhering to the policies that now cut them off from touch with the majority of boys and girls in our secondary schools. Moreover, we all know that the Committee of Ten has placed itself squarely upon this proposition. Whether manual training was considered when the proposition commended itself to them, I cannot say. The New England Association of Colleges and Preparatory Schools stands squarely upon the same proposition; but whether they have contemplated it as including manual training, I cannot say.

Manual training is becoming a very important factor in our high-school system. It is well-known that the State of Massachusetts requires manual training now in connection with high-school work in all cities whose population is twenty thousand or more. There are twenty-three cities under this requirement, and their population is one and

one-half millions. Fifteen of them have already responded to the law. Two or three more will respond just as soon as new buildings in process of erection are finished; and the remaining cities, I presume, are now wrestling with the problem. The Institute of Technology,[1] in an indirect way, is already recognizing this new sort of work in our high schools. It excuses graduates of the Mechanic Arts High School of Boston from certain work in drawing after they enter the Institute; and there is a readiness to excuse them from certain shopwork also. Thus the deck is cleared for a fuller and more extended enjoyment of the special facilities offered by the Institute. Now, all this, although it is only an indirect recognition of manual training, is a beginning in the right direction.

The educational value of manual training I cannot go into to-day, but possibly a glimpse can be given of two or three things suggestive of that value. Let us distinguish, at the outset, between what may be called pseudo-manual training and the genuine thing. The distinction is somewhat the same as that between the pseudo-kindergarten, which carries the name, but does not live up to the principles, and the genuine. The expression manual training is altogether too narrow for the field that it covers. I regret that there is no larger and better expression for the purpose. Some have suggested motor education. Somebody has coined the word *manumental* to fit the case.

Whenever and wherever, in educational history, educational processes have got separated from things, from natural forces, from human interests, from this real world in which we live, they have shown a tendency to run into subtleties and vanities, into puerile and useless things; and this tendency a few people have been wise enough in all ages to protest against. Rabelais made this protest four centuries ago; Comenius, three centuries ago; John Locke, during the seventeenth century; and Pestalozzi,

[1] Both the Massachusetts Institute of Technology and the Lawrence Scientific School will recognize manual training and drawing in their requirements for 1898.

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at the beginning of the present one. The education of the child is at its best, these men saw, when the conditions are most favorable for the development of his self-activity—his inward and outward activity. Such development should be under discreet guidance, of course—a guidance that tends to lead the child from his natural up to his ideal self; that is to say, from play up to work, from interest up to will, from instinct up to deliberation, from lower things up to higher.

Just think of the deep foundations of this philosophy of learning by doing, for which these men and so many others have stood—a philosophy which lies at the foundation of our manual-training work in the schools. On the one hand, the child is in the thick of objects that interest him, and interest him deeply; on the other hand, as we all know, the child likes to do and to make things; he likes to make them as he sees others make them; he likes to make them better than others make them, and he likes to own the things that he makes. Here are two classes of things—objects outside the child, and promptings within the child to handle them; nature on the one side, and manual work on the other side. Now, it is in the rightly guided interaction between these two things that the child grows. The concepts that are gained in this way—I am indulging in some truisms—are of the clearer kind, of the more definite sort; they have a greater fixity and a greater permanence. If you train the child simply through his senses, only the sensory regions of the brain are developed. If you add manipulation, the motor regions are also developed. It is the coupling of these two activities that gives added strength to concepts. The coupling is physical, the coupling is mental; there is the growth of the nerve-cells of the two areas and of the associative fibers joining them; and there is the mysterious soul-equivalent of all this. I say it is in this greater clearness, permanence, of concepts that we find one of the great values in manual training. Everybody knows that the concepts acquired by actual experience with baseball, golf, tennis, boating, gunning, are of the strong

sort. I have often wondered what the result would be if boys should be taught baseball in school by book methods exclusively, not being permitted to play the game themselves, or to see the game played in the field, or to make diagrams of the game. Imagine an examination of boys upon baseball under those circumstances! And what should we say of a conclusion, reached by the examiner in such case, that boys are not competent to master that subject?

Dr. Holmes tells us somewhere that there is an idiot area in the brain, as there is a blind spot in the eye. I presume he is right about it. There are plastic stages in the development of the brain, particularly in the development of the motor areas, and if the development does not take place during these stages, it is not likely to take place at all; thus, in the long run there may be left these idiot regions—these barren, useless Saharas of the brain. There are oases here and there, doubtless, but they emphasize the desert all around.

Now, these motor centers have been neglected in our education. They are developed, of course, after a fashion, by children as they play and work, but it is a wild, partial sort of development, sometimes good and sometimes bad. Neglect of this field of motor education is a neglect of one of the finest fields in which fruitful school work can be done. They tell us that no new brain cells and associative fibers are developed after thirty; I suppose that is the scientific way of saying that you cannot teach an old dog new tricks. Considerations like these are at the foundation of the laboratory movement of the world. I presume that the most conspicuous improvement that has been made in modern education has been made through laboratory methods of procedure. I claim that manual training is simply the extension of laboratory methods to the constructive processes of the arts of production and design.

We are told that we cannot have ideas or sensations unless they are accompanied by action of some sort. This action may be thwarted and brought to naught; it may be

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dissipated; it may be wasted. It is not exempt from the vicissitudes of other forms of energy. On the other hand, under suitable schemes of education, this energy may be concentrated and well directed. If there is not some sound training of the motor areas, some wise direction of the energy which comes from the action of the motor part of our cells, then education is to that extent one-sided and defective.

Think how much hinges upon right motor education. I believe this to be true, if I believe anything to be true, that persons who are brought up in strictly sedentary ways, in armchairs by their firesides, doing nothing but book-work, incline to look upon the great material enterprises of the world—the building of railroads, the laying of Atlantic cables, and all such enterprises—as things appalling. Again, what is habit but the persistent expression of human beings in action? Habit certainly belongs to the realm of motor education. If Herbart is right, that the supreme thing in education is ethical culture, and if the only expression of the will is through action of some sort, inward or outward, then the neglect of this field of motor training is the neglect of one of the great fields in which the character can be developed. Phillips Brooks tells us that character fades out in the inactive life, that we become builders by building, doers by doing.

And so, without going into the argument, but giving only glimpses of the ideas, let me say that the physiologist finds in the very growth and structure of the brain an invincible argument in favor of this whole laboratory movement in education, including manual training, drawing, modeling, sewing, cooking, and everything of that kind.

Perhaps it is said that manual training is not a good culture subject, because it is gross and material, because it deals with the shop, the store, and the earning of one's bread and butter. I claim that it may be an excellent culture subject. The highest expressions of human thought and feeling—those expressions that are eminent for their truth,

their fitness, their strength and beauty, that never cease to tell their impressive story, and are always suggestive of more to tell—these belong to the domain of art. The feeling for art, it seems to me, enlarges the field of human interest, of human happiness. It is a prerequisite to creative art. If you think of art for a moment, you will see two sides of it, the outer and the inner. If it is in the expression, it is also in the mind that prompts the expression. The mind may take in and enjoy what is artistic; it may, in rare cases, give out and do what is artistic. There is the passive, interior, receptive aspect of art; and there is its active, exterior, creative aspect: art subjective and art objective, art potential and art dynamic. The feeling for beautiful things is something that certainly can be cultivated in childhood, even though the execution may seldom come, or come not at all. It is enough to justify any education that fosters it.

This conception of art is something that applies to manual training, just as it applies to the study of English. There are the elements of English; there is its everyday language to be taught by every teacher—I am glad to hear that sentiment here to-day; and there are its masterpieces for the pupil to study, and, in turn, to equal if he can do so. In our modern thought there is a sense in which the elements, the everyday language, the masterpieces should be taken in successive years; there is also a sense in which they should be all taken in each and every year of the school. This conception of the teaching of English may be applied to any form of expression. Every form of expression has at its top an exalted something that corresponds to literature in English. Mr. Bailey will tell you that in the case of drawing there is a gamut from the child's crude scrawls up to Angelo; in the case of painting, from daubs of barbaric red at one end to Rubens at the other; in architecture, from the child's simple playhouses to St. Peter's at Rome. It is so not only with all the arts of design, but with all the arts of production—always crude, coarse, ugly at one end; always refined, well adapted, and elegant, at the other. The arts of

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production and of design are intimately connected. Art has been well called the handmaid of the artisan, the beauty of his soul, issuing from his finger tips. It seems to me that the logic that frames ideals for instruction in English, such as I have alluded to, would frame similar ideals for instruction in handiwork. I presume the finest culture lesson this country ever received was from the beautiful White City three years ago, on the shores of Lake Michigan. What was that but an exhibition of human handiwork at its best? So I claim this—that in manual training, in improving one's own handiwork and studying the best handiwork of others, there are high possibilities for culture, as there are high possibilities for culture in English. You may say that all this belongs to a manual training not yet realized. It belongs, I admit, to the ideal manual training—the real, of course, is limping along behind, in its slow, awkward way. I have a suspicion that in its limping it is not unaccompanied by other subjects mentioned to-day from this platform.

And so, without attempting to give in full the educational value of manual training, I may say that it affords a new and rich field for excellent quantitative and qualitative work. I do not know of a better field for that genuine correlation that strengthen's ideas. I might go on at a greater length, but will not weary your patience.

Ought manual training to be recognized in schemes of college admission requirements? I think it ought to receive some recognition. If it receives any, however slight, that will be a good beginning. How to test proficiency in manual training I hardly know. There is the certificate system; again, the candidate may submit specimens of work; or, finally, he may be subjected to tests at the bench, at the forge, or at the lathe.

If the subject has little educational value, we are all on the wrong track, here and in Europe; but if it has reputable value, it ought to be recognized in the admission requirements of the higher institutions. That recognition, in some form, I think, is in time destined to come. Certainly it

ought not to be denied a place in admission requirements because of any difficulty in devising tests of proficiency in it.

Mr. Charles S. Moore of New Bedford spoke as follows:

I can but unite with the other speakers in commending the schedule as presented by Professor Hall as a very great improvement upon the irrational system now in vogue. This has an attempt in it to equalize things. It does it very much more satisfactorily, and it certainly will afford a great deal of relief to many schools which now feel themselves seriously hampered by the present adjustment. Of course, it has been pointed out to you this morning that the predominance of the linguistic studies is very marked. In the final adjustment, under the various courses—*a*, *b*, *c*, and *d*—I have made a little calculation. Under the course *a* there is a total of 27 points, 19 being on the linguistic side. Course *b* is similarly apportioned. Course *c*, out of 28 credits, has 16 on that side. Course *d*, out of 28 credits, 12 on that side. This shows that the linguistic side still believes it has a prescriptive right to get from schools and from pupils twelve twenty-eighths to nineteen twenty-sevenths of their time and energy and labor. I think that is objectionable, in view especially of the great change in the modern conception of life and the increased means of adapting the pupils to it. The optional side, it seems to me, should be more fully developed in the line of the sciences. I can see no objection to the introduction of the subjects mentioned by Professor Davis, provided they can be enforced in the schools, and followed with the same earnestness and persistency with which some of the present studies are carried out. Certainly it will be a very great relief to have them as options. Educational matters are moving so fast that we might say that one increasing purpose runs through the decades now in this direction, and that is the purpose that is working itself out toward the end of the Committee of Ten, that a graduate of a good course in a high school shall be admitted to college. It seems to me that that is the point to which we are com-

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ing, and toward which should tend all our efforts. It is nothing less than justice to hundreds, compared with the five or six who go the other way. I speak very sympathetically, and agree with Mr. Sanford in his attitude upon that very point—that the graduate of the high school should find himself in a position to enter college. A case in point occurs to me. The valedictorian of the graduating class of my own school has led his class for the entire four years. There has been no exception. He has decided within a few months to go to college, and finds himself debarred from Harvard without taking at least one more year. He is easily first, and yet he must take another year before he can be admitted at Harvard. I consider that a gross injustice. I do not conceive that it answers the question to say that he can go somewhere else. His desire to go there was based upon careful consideration. He is obliged to add twenty-five per cent. to his preparatory time to get there, and this is a very great damage. One of the remarks made by Mr. Sanford I should object to. That was his statement as to the motive which he attributed to the effort to put studies down into the lower grades. He said it was merely to relieve the congestion in secondary schools. It seems to me that is a mistake. The movement with regard to putting these studies in the lower grades is not based upon just that ground. It is because it furnishes the pupils of the lower grades that which they need for the broadening and enlivening of their training. We have a great many teachers who teach their subjects admirably, but who do not teach the pupils at all; and that idea of the personal consideration must enter more and more largely into our conceptions of what we can do for our pupils. We find that what is one man's food is another man's poison. If true of man, is it not true of boy or girl—of the brain as of the stomach? It seems to me that due allowance must be made for aptitude. We must insist upon that question of introducing into the opportunities for college a larger variety. With regard to the matter of experimentation in science, it is a question of the

teacher, not of the subject. I have in mind two teachers, one of them a graduate of the Massachusetts Institute of Technology, who had there a very high standing in all his work, studied afterward abroad, and came back and made a careful study of secondary work, especially in his own line. He has charge of a laboratory where pupils are prepared for Harvard. The other teacher is a graduate of a woman's college, and took only the scientific studies required, and did no further work, and is likewise in charge of students preparing for Harvard College in physics. The young lady has excellent success, the gentleman has not, in meeting the requirements in physics. His pupils are admitted, but not with credit. The young lady ascertained very promptly that there were certain definite pieces of apparatus which the pupils must be exactly familiar with, and must understand without the slightest hesitancy, and that they must be ready to do an experiment while the stop-watch is ticking, and the other teacher said: "No; that is not my idea. I do not conceive that I am giving my pupils the very best training in that way; I am not opening up to them the true spirit of scientific work." I would choose, as I presume you would, the product of the work of the man to the product of the woman's work. There is a great deal of that sort of work done. Teachers are generally tied down to prescriptions, and the more minute they are, the worse the situation is. We ought, therefore, to require that our pupils shall be made to show a general grasp of the subject, and ability in that line, rather than minute information or distinct methods of using particular pieces of apparatus.

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III

DRAWING IN COLLEGE ADMISSION REQUIREMENTS

It seems to me wise to put before you in a concise form, by means of a little diagram, just what is included in that term—drawing. It means much more than it used to mean. In the last few years the course in drawing has been much enriched. At the present time drawing in public schools deals with nature and with the arts. We find that in considering any natural or artificial object, we may consider it as to structure, primarily, and when considering the structure of the thing, we have to consider certain elements of form. It is based upon a geometric solid or figure of some sort. We have to consider certain elements of beauty, if it is a beautiful thing, and then, if the pupil is to know just what that which he is studying signifies, if the educational process is to be complete, there must be, besides, some exercise by the pupil in structural design.

Again, we may consider natural or artificial objects with reference to their enrichment simply. The butterfly is colored and spotted; the building has ornament upon it. The enrichment may be by color only, or by certain form elements—geometric figures, leaves, plant forms, the human figure—either in outline or combined with color. Here then are two distinct topics implying a third, decorative design, as the motor exercise for the pupil.

But these same objects may be considered as to their appearance. Before we can appreciate appearances we must know something of the principles of perspective, and of how the masters of the graphic arts have managed to express themselves. Here are two new topics, again implying

a third, namely, pictorial drawing including pictorial composition.

Here are the topics as they stand to-day in the best courses:

NATURE AND THE ARTS	*Structure*	Elements of Form Elements of Beauty Structural Design
	Enrichment	Color Decorative Form Elements Decorative Design
	Appearance	Perspective Principles Pictures Pictorial Drawing

You will see how that course opens the windows of heaven and earth to the pupil. He deals with all the beautiful things in nature, with proportion and curvature and balance; he sees how these have influenced man in his work—in architecture and dress, in vases and other utensils, and in all things that we include under the head of the constructive arts. He deals with nature at first hand, discovering beauties of color and of decorative arrangement, through which are opened to him all historic ornament and the wealth of decorative design. In appearance, he deals with nature again, and here he catches a glimpse into the wonderful regions where Michael Angelo, and Leonardo da Vinci, and Raphael shine as stars forever. That means more than the arrangement of lines upon paper—it is an enriched course. Of the importance of such a course there is no doubt. Drawing has long ago been acknowledged to be a study of rare value in elementary instruction. I notice, in looking over this Report of the Committee of Fifteen, that over and over again they say it ought to have its place in elementary schools.

In spite of the fact that there are no penalties attached to the violation of the law requiring drawing to be taught in every school in the Commonwealth, we find this state of things: There are 353 towns in the State; 263 of these have regular instruction in drawing—95 per cent. of the school population of Massachusetts in the primary and grammar schools have such instruction. Of these 353, 135 have

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special teachers of drawing—87 per cent. of the school population of Massachusetts have the advantage of special supervision and instruction in drawing. In April, 1892, the Board of Education passed a rule that, on and after a certain date, drawing should be required in the entrance examinations to the normal schools. This was the first move that was made to recognize drawing as a required study. Within three years from that time, I find that 20 towns who had before disregarded the law introduced drawing, and 12 more towns employed supervisors of drawing, simply because it was required in such entrance examinations. That law includes not only the elementary but the secondary schools.

What is being done in the secondary schools to comply with it? We have 258 high schools in the State. Of these more than 200 do practically nothing in advanced drawing. We find that when the law, or rather the rule, was passed by the Board of Education, requiring pupils to be graduates from high schools before presenting themselves to the normal schools, they could not draw so well as the pupils from the grammar schools. The power simply failed to increase during the four years in the high school. It is not required in college entrance examinations. I have here statistics from the catalogues of Brown, Cornell, Yale, and Harvard.

Brown presents six courses of instruction, one literary and five others having to do with science and the arts. In all of these five courses for Bachelors of Science, Bachelors of Philosophy, civil engineers, mechanical engineers, and those looking toward architecture and the fine arts, drawing is required from one to four hours a week. What are the entrance examinations at Brown for these different courses? English, mathematics, French or German, Latin or Greek, and history. The same requirements practically for all courses, notwithstanding the fact that but one still remains literary, and that the five others are scientific and artistic.

At Cornell they have, in addition to the regular literary course, what are known as the Colleges of Architecture, of Civil Engineering, and Sibley College for mechanical engi-

neering. In architecture they require six hours a week in drawing during the first year, and six hours during the second year; ten hours a week in drawing during the third and ten hours a week during the fourth year. In Sibley College, and the college of civil engineering, drawing is required every year; and yet in the entrance requirements we find for subjects: English, geography, physiology and hygiene, American or English history, Greek or Roman history, mathematics, French or German.

At Yale is the Sheffield Scientific School, with eight different courses; in every course drawing is required, and yet in the entrance requirements they have: English, United States or English history, Latin, French, or German, mathematics or botany. Only one topic, botany, which has something to do with a scientific course.

The Harvard Scientific School offers ten different courses for teachers. In every one of those courses, except botany and zoölogy, drawing is specified as a required study (and no professor of botany or zoölogy would say it would not be required in those courses. It is required there every year), and yet in the entrance examinations you have English, history of the United States or of England, history of Greece or Rome, mathematics, physical science, German or French.

I want to include with these the Institute of Technology, which does not pretend to have literary courses, but has thirteen courses of technical instruction. Drawing is common to them all, and yet the entrance requirements are: English, mathematics, history, French, and German.

There are only about forty high schools in this State that do even fair work in drawing. Do you now see why? Then, in the college, the pupils are handicapped because they have not the ability to draw. If there were requirements here at the colleges so that the pupils during the high-school course were required to have drawing, and that their skill in drawing might increase, the work in every department of these colleges would be better because of the pupils' power

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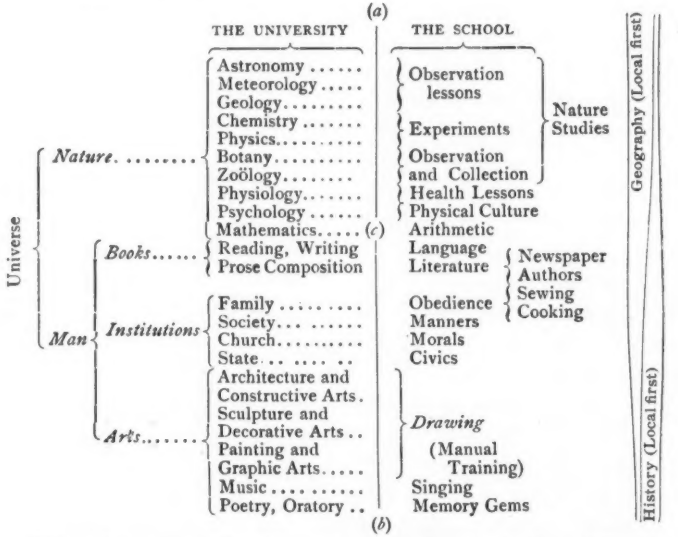
and knowledge of the principles of truth and beauty. Agassiz says: "The pencil is one of the best of eyes." And Asa Gray: "Unless the pupil draws, he will not see." And Huxley: "I have no room in my classes for a student who cannot draw." When you think what drawing means as the language of the arts—how we find drawing of some sort as the first output of the brain, and then from the drawing the construction of the thing—how it enters into everything in all our daily life, it does seem strange that nothing of the sort is required by the colleges. It is, above all others, the language of the arts.

The good work of the lower schools might be continued in the high schools, and the work in the colleges be immensely improved.



The diagram will show the relations of the different subjects. We find that man has considered nature, and in the consideration of nature has developed certain departments. For instance, meteorology and astronomy, geology, chemistry and physics, botany, zoölogy, ending with mathe-

matics, which Dr. Harris says is matter in pure form. These lead out into such courses as mining and medicine, and all those which have to do with the sciences.

Man has embodied the results of his thinking in books—I want to use that term in the generic sense, to include the languages and literatures of all sorts. In addition to that, he has recorded the results of his thinking in the institutions, the family, society, the Church, the state, and hence we have courses in political economy, political science, etc. He has also recorded them in the arts. Those arts may be grouped under five heads. First of all, architecture, which includes all the constructive arts. Then sculpture, including all decorative arts, and the great art of painting, which includes all the graphic arts. The art of music and poetry, which they say is a lost art in these days; and also the art of oratory. That is complex, but that is the life that now is.

Let us see what we have in the elementary schools. First of all, observation lessons on the weather, on the heavenly bodies; experiments in chemistry, in physics; experiments and observations on geology, botany, and zoölogy; in short, what is known as nature-study lessons; so that this first group, the nature group, has now a very prominent place in our courses of study in the elementary schools. We have, of course, mathematics, the three Rs, and literature in the schools. We have in the schools good government; we have instruction required in manners; we have instruction in morals, which has to do with morality in the Church and state, and lessons in elementary civics, which tend to make intelligent citizens. The arts are represented in the schools through drawing, the language of them, and manual training, which has to do with certain of them. Then we have singing, and the pupils, through memory gems and other exercises, become acquainted with poetry and oratory.

Somebody may say: Where are history and geography in this? They are here, as two wedges. Geography has to do with the earth as the home of man; and history has to do with man trying to make a satisfactory home on the earth.

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ab is the middle wall between the public school and what it teaches, and the university or college, and what it ought to teach—the larger, more abundant life. The entrance from one to the other is at *c*, with the mathematics and the three Rs, including the languages and literatures. Broad is the road to the public schools, and it is crowded; but strait is the gate and narrow is the way that leads to the larger life, and too few there be that find it. We may broaden it—take off a piece here and there, but I do not believe that will do it. If the university is what it ought to be, it should be four-square and complete, on the north three gates, and on the south three gates, and on the west three gates, and on the east three gates, so that the men all over this broad country who want to fight may go up every man straight before him, and enter in to possess the inheritance, from all these elementary studies, straight into the university through the gates of science, literature, and arts. I do not believe that we shall ever have the proper relation between the lower schools and the university until some such arrangement is brought about.

HENRY T. BAILEY

AGENT OF THE STATE BOARD OF EDUCATION,
BOSTON, MASS.

The discussion was continued by Professor Edwin H. Hall of Harvard University, who spoke as follows :

You should not infer from the scheme that I put before you what subjects are hereafter to be offered or accepted for admission to Harvard College. The table deals merely with things as they are. No doubt the college will add various subjects.

As to elementary physics. I should be a good deal chagrined at the criticisms offered, if I were not already very well aware of the imperfections of our present requirement, and if we were not already well on the road toward making serious changes in that requirement. The new requirement will give much larger liberty to the teacher, and will dwell much less upon the purely laboratory aspect of the work.

It will advise careful teaching, illustrated by qualitative work on the part of the teacher. But after making that explanation, I am afraid I cannot avoid altogether the objections which have been raised. One gentleman has objected to the examination as requiring the knowledge of specific pieces of apparatus. If we are to have an examination, we must have it with apparatus. Are these gentlemen ready to send their boys before us prepared to take *any* apparatus we may put before them? Our only reason for describing it is that they may know exactly what they are to be examined upon. We do not say that they must study with that apparatus and none other, but we cannot undertake to duplicate their apparatus. Twenty schools will have as many kinds of apparatus. We can only say what we will examine upon. They may use that or any other apparatus. The natural inference, I think, from what this gentleman has said, would be that we should accept the statement by the teacher as to whether the boys are prepared. Of course, the certificate system is often proposed, but I do not think we are ready for it yet. My experience with the notebooks would be decidedly against the advisability of that system.

One more criticism has been made. I think Mr. Sanford said that our experimental physics did not deal with any of the important principles or facts of the science. That statement simply leaves me wondering what *are* the most important principles and facts of the science.

Mr. J. A. Beatley of the English High School, Boston, spoke as follows:

I should like to correct the statement that, after a boy passes through an English high school, four years' language stands in front of him and prevents his entry into college. I speak only with reference to one high school, in which pupils receive a diploma at the end of the three-years' course. They are then able to go one year and take the requirements in column IV, and enter this university. After they have entered the university, they have acquitted themselves with credit, as President Eliot has said

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in one of his reports. Formerly, the boys who graduated from our school had to receive their diplomas from the Latin school.

Mr. Sanford replied as follows:

I have in mind a high school where there are alternative courses, in some of which Latin is an elective. In my own school there are four courses, a Latin and Greek course, a Latin course with one or more modern languages, a technical course (no Latin allowed), and a general course in which there is a large range of electives. It is possible in two of those four courses for pupils to graduate and receive our diploma, and still be unprepared, according to present requirements, to enter college. I do not think that our arrangement is exceptional. I believe there are many schools which do not insist upon Latin. A graduate from such a school would have three or four years of Latin to make up, should he desire to enter college.

In reply to Mr. Moore, let me say I believe thoroughly in the enrichment of the elementary school curriculum. I protest against enrichment from above downward. In the kindergarten we have a nutritious course of study. The elements of natural science, literature, art, and manual training all appear. If they are continued without a break we shall have a rich and rare programme for the pupils of the intermediate and grammar grades. I protest against a kind of enrichment which thrusts down algebra and Latin, with the sole purpose of enabling us better to fit for college. If by a natural growth we better prepare for college, we all rejoice thereat.

In regard to the physics, I think I stated clearly, not that the attention of the pupil was withheld entirely from the important principles of the science, but that a course so distinctively quantitative would not of itself give a perspective view and comprehensive knowledge of that subject.

IV

SECONDARY SCHOOL AND COLLEGE

I want very much to have an opportunity of saying a few words about the meaning of Professor Hall's table. As he has stated, it relates solely to existing conditions of admission to Harvard College—not to those which we are projecting, and not to the best theoretical conditions. It has been spoken of as a palliative; and a palliative for the existing conditions of things it surely is, if it be nothing more; for it is a great improvement on the present mode of valuing subjects. A year ago, in this place, I spoke of the importance of determining the values attributed to subjects for admission to college by the time allotments given to the several subjects in the secondary schools. I suppose teachers observe that that is an enormous concession on the part of the colleges and universities to the secondary schools. I believe it is a just concession, and that it should have been made long ago. But just think what it means in the enlargement of the function of the secondary school and of its responsibilities. If the requirements are to be valued by the time allotments of secondary schools, how important it is that those allotments should be made wisely by you who are teaching there. You have the great responsibility of programme-making, which determines the valuation of subjects for admission to the higher institutions. That responsibility I proposed, a year ago, should be yours. Professor Hall has just applied that principle to a particular state of requirements, and he shows you the result—a great improvement on the existing methods of valuing subjects.

This improvement being admitted to be a palliative, let us next consider what additional changes are required in

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order that the measure should be not only a palliative but a remedy, which is very much more important than a palliative. What is the amount of additional development that this subject requires, in order that we should arrive at a remedy for the gap between the secondary schools and the colleges? The only addition this scheme requires is that a very few more subjects be admitted to this list. What shall determine the number of these subjects? Simply, in my view, the established practice of good secondary schools as to the selection of the subjects which had better be taught there—a practice based on actual experience. There are not more than four or five subjects that can be added, on that principle. I submit that the next thing to be done is to add to this list of Professor Hall the few subjects which the experience of good secondary schools shows should be seriously taught in those schools for the good of their own pupils and with no ulterior views. Having examined many secondary-school programmes, I cannot find that any good schools teach, thoroughly, more than four or five additional subjects. Can anybody point out more than four or five additional subjects taught in good secondary schools with a thoroughness which would give them a deserved place on this list? I submit, therefore, that it is only a short distance to the remedy. I will add that the Harvard faculty is well advanced on the right path, and I hope will get to an issue within a few months.

But now there fell from Mr. Sanborn one or two remarks that I dare say were accidental, or perhaps not thoroughly considered at the moment, but seemed to have a dangerous tendency. I agree absolutely with his proposition that nothing should be taught in secondary schools except what is put there in the sole interest of the secondary schools. That is a proposition which seems to me to be as plain as anything can be. It does not make the least difference in this respect whether it is an endowed preparatory school or a public school supported by taxes. Nothing should be taught there except what is the best possible thing for the

pupils in that school at the ages when they belong to the school, looking to nothing beyond. I should amplify this statement by saying that I personally believe that the course of study which is best for the fortunate children whose education is to be prolonged beyond the age of eighteen years of age, is also the best for those children whose education is, unfortunately, to stop at eighteen. I do not believe there is the least distinction between the best thing for one set of children, and the best thing for the other set. I believe the great sin in our public high schools is that they give an inferior course of instruction to those children whose education is to be the shortest. But, accepting the statement that there should be nothing taught in the secondary schools which is not placed there in their own interest, I must protest against the proposition that it is more important for the secondary school to connect itself with the elementary school than with the higher institutions. I believe that to be an absolutely fatal error, just exactly as I think it is a fatal error in the individual if he does not look up, and not down—if he does not seek his inspiration from above himself. Can any proposition be plainer than that in a school we must always look upward? Shall we not follow Emerson's advice and hitch our wagon to a star, and not to a bowlder by the roadside that has not moved for millions of years. Practically, what has been the source of improvements in education, here in the United States, for the last two generations? It is fifty years since Agassiz landed here. Where did laboratory teaching begin? Who brought into this country the method of studying zoölogy by observation and experiment? Louis Agassiz. Who did the same service for botany? Asa Gray, whose honorable name has been already mentioned here this morning. From what institutions have come the superior methods of teaching Latin and Greek within the last twenty-five years? Those languages have been taught in American secondary schools ever since the Boston Latin School and the Roxbury Latin School were founded in the seventeenth

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century; but where did the improved methods come from? From the colleges, and the colleges only. Who started the method of reading at sight? Who produced books designed to encourage it? The classical department of Harvard College. Where are you who teach geometry, getting to-day the inspiration for the right mode of teaching it? Geometry is one of the oldest and most important subjects of human instruction; but who introduced that method of teaching geometry which requires something more than the committal to memory of a series of propositions—which demands that the pupil learn to originate or invent something himself? The mathematical and physical departments of Harvard University, taken together. Who have been most active, most energetic, most hopefully successful in developing the teaching of history in the United States? The college professors. Who have written the best books for teaching history? The college graduates. You cannot mention a subject of instruction in the secondary schools in which the inspiration to better teaching has not come out of the universities in this country and in Europe. I submit, then, that it is for us to hold firmly to the conviction that the way to improve the secondary schools of the United States is to cling closely to the colleges and universities, and to multiply the points of contact between schools and colleges. And I will add that the way to improve the elementary schools is to associate them closely with the secondary schools, and to correlate, at every point where it is possible to, the work of those two departments. By and by we shall find out that all these distinctions between grades in education are in the highest degree artificial; and that there should be but one aim, one method, and one system throughout the entire course of education.

CHARLES W. ELIOT

HARVARD UNIVERSITY,
CAMBRIDGE, MASS.

V

EDUCATIONAL CONDITIONS AND PROBLEMS

The three following papers contain the substance of the remarks of the speakers at the annual dinner of the Association:

Even at such short notice as this I should be a very ungrateful man if I could not say something in regard to the teachers of New England, for certainly, of all beneficial influences that came into my early life, one of the very best came from a New England teacher. I have been accustomed to say—indeed, on one occasion I published it—that the best instruction I ever received in any part of the world was from a New England schoolmaster; and that not only on the intellectual side, but on the moral side, and indeed, I might say, on the religious side, including the musical side. I am sorry to say, he was not a Harvard graduate, although he lived within a short distance of Harvard, and impressed his students always with a very great respect and even reverence for Harvard. It was Mr. Joseph A. Allen, living in Medfield. He came to central New York, and I remember made a very deep impression upon the youth of Syracuse. I do not mean a physical impression, for he claimed that he was averse to corporal punishment, although he had a way—he was very athletic—of taking hold of a student, which was equivalent to corporal punishment in a very strong sense. I need not say to an audience of this sort that I am duly impressed with the function—with the duty—with the ideal of the teacher. Indeed, I have been so much so that I risked my life upon it once. I have been a teacher myself. The happiest days I ever passed were as a teacher, and when my friend, Professor Adams of the University of Michigan, my successor in teachership, informed me that he had been called to two university presidencies in the West, I said to him: "If any man calls you to another

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college presidency, shoot him on the spot." And within a month I was obliged to tender him the position of President of Cornell University! As you see, I narrowly escaped with my life, and the cause of it was my admiration, my love for the profession. My friend at my left [President Eliot], who has distinguished himself above all others in the United States for his administrative work, I think will agree with me that happiness, at least, does not lie that way.[1]

I have speculated somewhat upon politics in my day—have had a little to do with them sometimes, and I am profoundly of the impression—it is one of the things left in a somewhat skeptical age as a ripened conviction—that on the education in this republic is to depend its continuance. I have called the attention of other audiences to the fact, but I do not hesitate to add you to the number, that the republican form of government is by no means a new thing in this world. A number of great republics, officered by great men, have existed in the world. Their history has been very brilliant, and yet, of them all, only two remain—only two can be said to have lasted. Naturally, I do not count France, which exists simply because there is no head of any other party which is strong enough to marshal a party; therefore it remains a republic for the time being. I am speaking of Switzerland and the United States. Those two republics differ from all the others in only one particular. Other republics have been deeply religious. The republic at Florence was as deeply religious as any community that ever existed. They have had every virtue except an enlightened body of citizens. Switzerland and the United States have that. They stand some chance of continuance.

When I speak of education as a necessity for the republic, then I do not refer merely to those who teach in the public schools, teach men to be able to read their books and newspapers—that is a function which I respect—but I refer to the whole of education, from the bottom to the top, in all

[1] [President Eliot subsequently said that he did not agree with President White's view that happiness was not to be found in administration.—EDITOR.]

its phases, for, of necessity, you cannot have any part of it adequately developed, unless you have the whole of it. You cannot have blossom and fruitage, unless you have the sound trunk and the sound roots; and if you have the public-school roots of the system, and the intermediate schools and high schools as the trunk, and the university as bearing the bloom and fruit of the system, you can easily see that each is necessary to the other, and you cannot have one without having the other. That has always been my doctrine—all the parts are inseparable, and the pretty attempt now making in some of the Western States to pit one against the other is probably as futile as any of the worthless expedients that have appeared in the history of public instruction. Therefore, I must warmly congratulate you on your profession, and on your work in it. I know of none more worthy, none in which a man ought to be, and indeed, on the whole, most men are, more happy. I trust that you feel a due sense of the work you have in hand.

The school, the press, the pulpit, after all are, and will continue to be, the three great potent energies in the proper evolution of an American people fit for liberty and republican institutions. That you realize this to some extent I have no doubt. I doubt whether any of us realize it as we ought. I trust that, more and more, the time is coming when the simple, great principles of morality which lie at the bottom of all proper political development are to be taught in our schools of all grades, including colleges and universities, and when they will be brought to bear more and more in producing that environment which is the only thing, after all, on which we can rightly depend for a future proper development of our institutions and national life.

I have lately addressed audiences at two of our Western universities, at Minneapolis and at Madison, and I wish to bear to you from that quarter the happiest of tidings. It is magnificent. I came back with renewed hopes and courage and faith in the country. I had looked into the faces of audiences of students, magnificent audiences of students—

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of pupils in the high schools—they make you speak at every turn-out there. I had even looked into the faces of the members of the legislature; and I must say—you think that is an extraordinary proof of courage—with renewed hopes for the country. At Minneapolis, without in the least expecting it, I was hurried into the speaker's chair and made to address the Legislature, and was replied to by Mr. Ignatius Donnelly. He insisted, in his speech in response to mine, that the dominating race of this country is now being produced upon the highlands of Minnesota. He remarked that in the olden time, the great brains, the great men of the continent, were produced in Virginia, of whom George Washington was one; but that the great brains of the present, the great men of the present and of the future, are produced, as he said with great emphasis, upon that high plateau of which Mineapolis forms the most important part. So I wish to warn you that you have competitors. I wish to warn you that you have men observing you and competing with you; that you are not to relax your efforts, if the supremacy of New England is to be maintained. Mr. Donnelly and the others are determined you shall not carry it off easily. He especially charged me to inform the East, when I returned, of these facts, as he called them, and I am now simply fulfilling his injunction. In a noble outburst, the peroration of his speech, he said: "I call on the gentleman, when he returns to the Eastern States, to tell these things to his fellow-citizens;" and now I have done it.

ANDREW D. WHITE

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I have been invited a great many times, I am happy to say, to speak in a manner for the ladies. I always enjoy doing it; and I remember that on one occasion, in New York, I was fortunate enough to do it so well that one of the genial morning papers—I dare say it may have been the

New York *Sun*—remarked that unquestionably, if I had been confronted during the speech by a casual mouse, I should have gathered my garments about me and jumped up on a chair. It is true, perhaps, to this extent, that I have more than once tackled that very question, which is generally the crowning appeal of the unrighteous on the whole subject of woman's position, and have expressed frankly my belief that if men wore skirts as long as women do, they too would unquestionably jump up on a chair.

In another respect, also, I feel that your summons to me is humane in its character. I know nothing that indicates a wider prevalence of the spirit of Christian forgiveness in a body of teachers than that they should be willing to receive and hear resignedly one who has spent a large part of his life on school committees and boards of education. That great American thinker, Mr. Emerson, in an address on New England reformers, in classifying the different elements of that body, said that there were some of them who devoted themselves exclusively to "the worrying of clergymen." I have belonged for many years to a class which has devoted itself largely to the worrying of teachers. In the early days of the republic I was put on the examining committee on mathematics in Harvard University, just after graduation, at the age of eighteen. There has been really scarcely a year in my life when I have not been on some board or some committee, or some inspecting body, the primary function of which was to render teachers uncomfortable. In that capacity I have asked many unoffending teachers many questions that I could not have answered myself, and have sometimes favored them with information which, I fear, they did not subsequently find confirmed by the text-books. I can only say this, in my own defense, that, from the beginning of my career in that respect, I have made it an absolute rule never, under any circumstances, to vote against raising the salary of any teacher. I have made that a rule, and have but once in my life, I think, varied from it.

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All this, if it has done little good to the schools, has done at least this kind of good to me, that there is no class in the community who have, I feel, a profounder claim to our admiration, or at least to our sympathy, than the teachers of the community. I do not know any other class which is, on the whole, tested so severely. Mme. Roland says somewhere that it is one of the incidental objections to the married state that it is a union in which one person is expected to provide happiness for two. The teacher's position is incomparably worse, because, according to the ordinary standard of numbers, a teacher has to provide happiness and all manner of wisdom for forty. When we go into a school, we not only see the spectacle which Wordsworth found interesting in respect of cattle, of "forty feeding like one," but the whole forty are feeding on the teacher. That cruel motto which Horace Mann imported from Germany, "As is the teacher, so is the school," must have weighed with a tremendous sense of responsibility upon the whole teaching body since. And it is, if you look at it, a serious matter. When you compare the temper and conditions of school life with the natural temper and condition of the child, you find at once a discrepancy which the best teachers have as yet found it hard to reconcile. Here is this child, naturally bright, alert, active within his own range and on his own ground, his mind so quick and active that no person in this room could compare with him in the rapidity with which he would learn a new game—for instance, learn in half an hour just where to stand, where to go, who is "it," who isn't "it," what it is to be "it," what it is not to be "it." In a game of cards he will tax your brain to follow him. I look back at this moment at one of the very severest mental exercises of my life, that of attempting to learn the game of bezique from a little girl twelve years old. She left me in a state of mind when I could almost more easily have comprehended a university tabular view, or your programme of this morning. And yet, if I myself had been a teacher, and had that child in school, I might often have been compelled to admit

—perhaps even to charge upon the child as an offense —that she was dull, uninterested, slow. Why is it—is the perpetual question—that in dealing with these creatures who are made of such active life, we cannot keep the life in them while we are giving them human nature's daily food of instruction?

We know, and we cannot do. Our schools are not what we wish they were. A French dramatic critic, Sanson, listening to a certain play that a young aspirant was reading, went sound asleep early in the play. When the reading was over, he awoke, and informed the youth that it would never do. The youth said, with just indignation, "How do you know? You cannot even have formed an opinion; you were asleep." Said the critic: "Sleep is an opinion." The verdict upon the average school or upon the poorer class of schools—those which are not fortunate enough to have any of the teachers here at their head—is the reign of sleep within them. Professor Crosby of Amherst College, whom some of you may have been fortunate enough to study under, either as professor or normal-school teacher, was, I think, the wisest man I ever had to do with in regard to schools; I was with him on the schools of Newburyport. He had a favorite test he used to apply to see whether the children's minds actually exercised themselves or not. He would stand before the children, bland in appearance, but with a possibly formidable gleam through his gold spectacles. He would stand before them, and tell them that there was one question he wished very much that they should answer. All attention was fixed. He said: "Suppose any one of you were to go out of the front door of this schoolhouse, and walk five miles due north. Suppose he were then to turn round, and walk three miles due south; how far from the school would he then be?" He told me that he felt fortunate if he got hold of a school in which two boys or girls could answer that simple question. What was the defect? Not in anything they had learned; not in the text-books or methods of instruction; but that, somehow or other, the school was not

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alive, or the child's mind was not alive. It could learn its lessons in a certain way. It could follow in a certain way the guidance given; but to take a wholly fresh thing, however simple, and deal with it—the child's mind could not do it.

We all recognize what he implied in that question and criticism. From the point of the school inspector in my days of darkness, before I had sowed my wild oats, I used to say to myself: After all, the teachers should have something to do with it. There must be some fault somewhere, to be overcome somehow, in the teacher. There is the child, with all its natural powers. The child cannot be made over; you must take the child as it comes. Is there nothing in the teacher which is responsible for this defect, and no method that can cure it? Then I sometimes replied to myself what one of the ablest "schoolmen," as they say nowadays, whom I ever encountered, Mr. Admiral P. Stone, formerly school superintendent in Springfield—what he said once when I was with him on the board of education. He expressed the opinion, which I do not think any other member of the board would have dared to express, that about two-thirds of the methods employed in our schools tend toward the deadening of the child's mind, instead of waking it up. Then I think of what my friend, Mrs. Palmer, told me once, in that admirable story which has been told so often that I do not doubt Mr. Chauncey Depew is telling it somewhere at this moment, about the child who told his mother in a moment of confidence that the thing which really troubled him was those dreadful questions: "If John has two red apples, and Charles has two red apples, how many apples have they both got?" "Well," she said to him, "you know perfectly well two and two make four." "Oh, yes!" he said, "of course I know perfectly well that two and two make four, but it's the process that wears me out!"

Can we not at least avoid the additional deadening which the "process" gives? I remember how, in the schools, even in normal schools—for I have had the handling of two or

three normal schools in different States, and very poor handling it was—I remember how in normal schools I have seen a class of pupils taught how to teach other smaller pupils; and they were taught how to take, for instance, a stuffed bird up, and hold it before the class, and make believe that they were children, even smaller than they were, and that they knew even less than they did. This would be the process: "Children, what is that?" "That is an animal." One child says rashly, "It's a bird." "No, it isn't a bird yet; you mustn't say it's a bird!" They analyze and establish the fact that it is a bird, until one rash boy puts in his oar, and says, boldly and unflinchingly, "It's a bobolink." "No, no, John, it isn't a bobolink yet; you mustn't say it's a bobolink."

I am glad I was building better than I knew. These things bring it home to us that, after all, even the teacher may have something to do with it. I recall what I once heard from a clergyman who was present at a discussion of clergymen about various profound problems. One problem was what they were to do about it when parishioners would go to sleep during the sermon, especially in summer and in an agricultural region. Mr. Beecher was finally called upon for his opinion. He said: "All I can say about it, brethren, is that in Plymouth Church we find a very successful method. The sexton has orders, if anybody is seen asleep in the church, to go right up into the pulpit and wake the minister." Is it not possible that it may be so with the teacher?

And if you ask me how the teacher is to be waked up, or wake himself up, I can only say that, with all my experience, I have but imperfectly discovered how to keep myself awake, and I can still less do it for others. One thing alone I would suggest, and that is a thing within the reach of all—that just so far as the teacher becomes himself a learner, and keeps himself perpetually in the attitude of learning, just so far he is near the pupil, and can see through the pupils' eyes, and the pupils through his eyes. As is the teacher, so is the school, is a motto well reversed, if we can only say, As is the

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school, so is the teacher. That is, if the teacher can share that youthfulness of mind, that freshness of spirit, which is the only thing in which his pupils surpass him.

I remember, in regard to the gentleman who last addressed you this morning [President Eliot] as I saw him with pleasure coming in like a Prince Rupert of debate, as he always does, and being received with cheers by you, some of whom, perhaps, criticised him two years ago when he started the same ideas—I always feel that I have the key to his nature, in a manner, and perhaps to his success, in recalling what I heard him say once at a dinner of librarians in Memorial Hall, that he thought it might be due to his early chemical studies, but there was always to his mind a fascination in the word "experiment." That is the key to his success. Now, the utmost that I could ask for this body of teachers would be that by that same cultivation within themselves of what they are seeking to cultivate in their children, they should meet the children on common ground, and no longer do as Charles Lamb says the teacher is apt to do, "talk down to his little people."

Perhaps it is because I am coming so near to what Leigh Hunt calls a man's anecdotage, that all which belongs to childhood is fascinating to me; and I would therefore plead for their point of view, as well as for yours; that we all, as far as can be done, may be children together.

THOMAS WENTWORTH HIGGINSON

BOSTON, MASS.

We have here a gathering of highly educated, practical, hard-working teachers, whose minds are especially turned at this moment and to-day to the great problems of education, and we feel for the moment as though the world were to-day full of teachers' associations—as though everybody in the profession had exactly the same hopes and interests and aims. But when we look over the country, the future of American education is, after all, not too hopeful. How hard it is to carry through and main-

tain and enlarge reforms which are already begun, as in cities like Cambridge! What danger there is of failure in a great city like New York, where a popular movement for reform is still not beyond the point where it may be arrested and perhaps turned backward! And then consider the more lamentable condition of great cities like Philadelphia and Boston, which do not realize that they need reform.

Looking over the whole field, we feel that there is some ground for anxiety, and yet, perhaps, for hopeful anxiety. Just as in military affairs there is an offensive-defensive and a defensive-offensive, so there is a pessimistic optimism which is sure that things in general must come out well, through an overruling Providence, though everything in particular go wrong; and there is also an optimistic pessimism which takes account of the unceasing difficulties in the way of the improvement of mankind, and in particular of the reform of American education, but still recognizes the steady advance. As one looks out over the whole field of education, one is tempted to say, as Franklin said at the end of the Constitutional Convention: "I have often and often, in the vicissitudes of my hopes and fears, looked at that sun behind the President without being able to tell whether it was rising or setting." But our sun is a rising sun, and the members of this Association have risen early to meet it.

What reasons have we for thinking that, in spite of the slow progress of reform, in spite of the setbacks to reforms apparently accomplished, on the whole education in the United States is advancing; and that fifty years hence it will be as far in advance of present achievements as to-day is in improvement over fifty years ago? We may hope something from the realizing of our own defects. When, in 1830, the Duke of Wellington, as Prime Minister, was challenged by the borough reformers, he replied, "that if, at the present moment, he had imposed upon him the duty of forming a legislature, he did not mean to assert that he could form such a legislature as they possessed now, for the nature of man was not capable of reaching such excellence at once, but his

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great endeavor would be to form some description of legislature which would produce the same results." So, often, the readjustment of education seems to go back to the same point—there is a new system, but it produces the same results as before. But, just as the people in the slums are on the highway to improvement when they realize that they are no longer comfortable, and that they ought to be in better condition, so we may hope something for educational reform of the country because so much has been done to make people discontented. This unrestful movement, which at first was called an attack upon the public-school system, is very recent; we can trace back but five or six years the beginning of a determined effort to discover whether there was a difficulty in American schools, and where it was, and how to obviate it.

When attention had been directed to the defects of the schools another encouraging process followed—patient and serious investigation. The first necessity was to know the actual condition of the schools, and more has been done in the last five years than in thirty years before, in the way of actually bringing before the minds of the people the status of American schools, the relation of scholars to teachers, the methods employed, and the system of school administration. These investigations have also included inquiries into the fundamentals of education. Child-study, of which we hear so much, and which, of course, may be abused, does mean that those who teach are undertaking to find out what they teach; and if the most elaborate study of the child will not enable a poor teacher to teach better, it will at least confirm a good teacher that she is teaching well.

This is an " I want to know " period. Already two great investigations of the National Educational Association have culminated in the Reports of the Committee of Ten and of the Committee of Fifteen, and we may hope soon for a report from the Committee on Rural Schools, and also from the Committee on Admission to Colleges. These investi-

gations furnish the teachers and the public throughout the country with the ammunition that is necessary to batter down the walls which seem to shut in and surround and defend the poor systems of the present day.

Not least of the results of a new interest felt by teachers in their own profession has been the improvement and increase of educational associations. Not only has the great National Educational Association taken on a new aspect of vigor and efficiency throughout the country, but local bodies are multiplying, which include educational workers from different fields and of different interests and subjects. To the flourishing New England Association of Colleges and Preparatory Schools, and its sister, the Middle States Association, is now added a similar society in the Northwest; and there will doubtless follow another for the South, and still another for the far West. This means that in each of these five sections problems are being taken up with special reference to the local conditions of those sections.

Of these problems none is more important than the relations of the schools and colleges. Up to the present time these two systems of education have had to each other something very like the relation between the earth and the moon: the two bodies revolve around each other, depend on each other, control each other; but do not tend to move nearer to each other. The effect of the educational reforms of the present day has been to bring the colleges and schools into knowledge of each other's needs; even so serious a joint concern as mutual discussion about entrance requirements is a new thing. How long is it since the colleges troubled themselves about the opinions of the schools on such matters; or the school boards so much as knew the purposes of the colleges?

Another evidence of the improvement of education is in the better training of teachers. It is not very long ago that application was made to an officer of this university, to recommend for a college in the West a Presbyterian professor of geology: there was to be a distinct understanding

that, if any student asked the Presbyterian professor how old the world was, the inquirer was to be referred to the president of the institution. Thirty years ago the method of filling college positions was to select promising members of the graduating class, and to set them at work as tutors of any subject, or even as full professors. To-day hardly a college in the country, even the smaller and poorer ones in the most distant West and South, when an appointment is to be made, fails to require of a candidate that he should have had a graduate course, foreign or American, and that he should actually know something in particular about the subject which he undertakes to teach. There are evidences of a similar improvement in the new demand for special preparation of teachers in the normal schools; for it is notorious that for many years after the normal schools were founded, the teachers—though men of education—were not chosen because of special qualifications for their particular chairs. The opportunities for the training of teachers of primary and secondary schools also are much increased. At the University of Pennsylvania, at Yale, at Harvard, at Teachers College in New York, and at the University of Chicago are offered special courses for teachers in service. These advantages are this year accepted by 282 teachers registered as students at the University of Pennsylvania; by about 120 at Yale, and a large number at Harvard. That means that the universities have at last recognized the duty and opportunity of making their facilities count for something for the teachers about them.

There has been another very great improvement in the materials with which the schools work; the school buildings improve, apparatus and school furniture improve, the tools are better. Think what a difference there is between Pinneo's *Analytic grammar* and the ordinary, modern text-book in English composition! Think of the old days of singing geographies, and compare the results with those of the best modern geographies well taught. Think of the improvement of text-books in mathematics and in science.

Any school committee, which so desires, has now the opportunity of finding good text-books in every subject. In the field with which I am most familiar, American history, there were, twenty years ago, almost no school text-books which were anything more than an account of Indian wars. An old lady relates that in her day American history consisted in learning the names and places of the battles of the Revolution, with the names of the commanders, the number of troops on each side, and which army was victorious: when she could not remember who won she always gave the palm to the British, because they had the most men and usually won. A more patriotic friend of hers, in case of any doubt, always said that the Americans won, because they had the righteous cause. Now the most eminent scholars in American history do not think it beneath them to write text-books which have in them something more than the battles of the Revolution.

Furthermore, when we consider the condition of American schools, they are, on the whole, better than they seem to be. Mr. Bryce, in his *American commonwealth*, notices one institution after another which is so defective that it ought not to work well; but somehow, as he points out, it does work well. So of the American schools—they have many defects; they can be greatly improved, but they stand well among the nations. Three years ago I took occasion to visit the schools of Montpellier, in France. The city is very like Cambridge in its conditions—a thriving and intelligent university town with an excellent system of public schools. I followed through one school of each grade for boys, and another series for girls, from the kindergarten up to what corresponds rightly to our manual-training school here—a sort of inferior high school. Comparing those schools with the schools of Cambridge, I was convinced that the Cambridge plant is better. Of course, we see none of those buildings of beautifully cut stone which they admire in France; but our schools are better lighted, ventilated, heated, and drained, and are far more suitable for the chil-

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dren. I was satisfied further that the quality of the teachers in Cambridge was far above the quality there, even although every French teacher had gone through a careful course of elaborate normal-school training. The intellectual quality of our children seemed decidedly higher. When I observed the real impression which the teachers in Montpellier make upon their pupils, I was proud of our Cambridge teachers; for the result of ten years' schooling in Cambridge, as compared with the same period in Montpellier, seemed to me more likely to advance a child. The Swiss schools also seemed to me no better than the American schools. The net result was that I came home with a feeling stronger than ever before of the real efficiency of the American public schools.

Nevertheless our schools are, on the average, far below what we have a right to demand; it is not the scholars, nor the teachers, nor the school boards who need improvement. If the teachers could make the schools what they themselves desire, there would not be the necessity for so much discussion about educational reform. What we need is a reform in the public opinion of the average American. Common schools is a splendid term; "common" is a splendid word. But there is such a thing as commonplace, and, in general, what we need in our schools on the part of parents and the community is a higher average standard as to what they have a right to expect of the schools, teachers, and governing boards. Such a state of things as has long existed in New York city would be impossible if the average man understood what may be done with schools properly carried on. You all know the story of Anderson's heaven. When he arrived at the gate he was invited by St. Peter to select his own heaven and to lay out his eternal life to suit himself. Said he, "I will have every day roast goose with apple sauce, and every evening the daily paper." So St. Peter left him to enjoy his heaven, promising to come back in a thousand years. For a year Anderson was thoroughly contented with his roast goose and daily paper. Then it began

to get monotonous—the roast goose lost its flavor, and the evening paper contained no news. At the end of the second year Anderson became restless and began to range about his heaven till he discovered an attic. At the end of the third year he discovered a light in a knothole in the wall of his attic, and by standing on tip-toe he was just able to apply his eye to the opening, and there, for the first time, he looked over into the real heaven. Nine hundred and ninety-seven years afterward, when St. Peter came back, Anderson had never moved, but was still on tip-toe with his eye to the knothole, looking into the real heaven. If the American public could only for one moment realize the possibilities of such schools, they would insist on having them for their children.

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VI

EDUCATION IN THE GREATER NEW YORK CHARTER

The Greater New York Charter is contained in a volume of 796 pages, of which 54 pages are devoted to education.

The school administration is dual—consisting of a board of education with nineteen members, " which shall have the management and control of the public schools and the public-school system of the city, subject only to the general statutes of the State relating to public schools and public-school instruction "—and to the provisions of the Act. In addition there are four local school boards, termed borough school boards, having jurisdiction over matters within the limits of their respective localities as prescribed and defined by the provisions of the Act.

The first notable variation from existing methods of school administration in the Greater New York Charter is the division of the city into boroughs. These are: (1) Manhattan and the Bronx, including that part of the present city of New York lying below the Harlem River, and that part of the present city of New York above the Harlem River; (2) Brooklyn, including the present city of Brooklyn; (3) Richmond, including Staten Island; and (4) Queens, including as much of the county of Queens as is included in the Greater New York. Each of these boroughs is to have a school board and a board of superintendents (elected by the borough school board), and is to control its own schools, subject to certain restrictions. At first thought this is a decided weakness, but when we take into consideration the problem that confronted the Charter Commission it seems a happy solution. Each of these boroughs has a distinctive character.

Each has been conducting its schools upon a plan and by methods which, whatever may be their respective merits, have a local standing and flavor. Each borough, therefore, has a problem which its own board of education and its own board of superintendents attempt to solve. It will be readily seen that this plan forces a fluidity throughout the entire Greater New York and prevents the crystallization which would inevitably result in so large a city from the administration of a central board only.

The members of these borough boards are appointed by the Mayor of the Greater New York. This insures a certain amount of homogeneity in the operations of these borough boards. Were they elected by the people in these boroughs, the tendency would be to set up little independent principalities within the larger body, which tendency has been the bane of existing systems, with the exception that the principality was much smaller and therefore more dangerous, as it was composed of a single school organization. The borough school board elects its president, clerks, and such other officers as may be necessary; has in its charge, for safe keeping, the school buildings and school property of the borough; selects sites for school buildings; elects a superintendent and associate superintendents; appoints principals and teachers and fixes their salaries; regulates the transfers of principals and teachers. It has no power over the construction of school buildings; it has no power to represent its borough before the Board of Estimate and Apportionment or before the Municipal Assembly, on any matter of appropriations. It has no power to purchase supplies needed by the borough; it has no power over the certification of teachers; it has no power over the apportionment of the general school fund; it has no power over the special school fund.

To harmonize and to make cohesive the work of administration in the city, a board of education is provided consisting of representatives from each borough school board. Each borough school board is represented in the Board of

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Education by its chairman, making four, and in addition there are elected from their own membership fifteen other delegates (ten from Manhattan and Bronx, five from Brooklyn), making a total of nineteen members. This Board of Education has all financial responsibility: the asking of appropriations, the building of school houses, the purchasing of supplies, the licensing of teachers on recommendation of the City Superintendent and in accordance with the terms of the Charter. The different school funds are placed in charge of the Board of Education. Thus the borough school boards deal largely with questions of detail in the administration of affairs in their respective boroughs, which, if thrown into the Board of Education, would render the work of administration extremely arduous; while the Board of Education deals with general matters, and has control over the borough school boards to such an extent as to prevent the growth of well-known abuses. The central Board of Education elects a City Superintendent, who shall have charge of the schools of the entire city under certain restrictions. The professional or pedagogical administration of the schools in each borough is placed in the hands of the borough superintendent and his associates, who constitute what is termed the borough board of superintendents. They have power to establish rules for the promotion, graduation and transfer of pupils; have power to transfer teachers from one school to another, subject to the by-laws of the borough board; have power to recommend all text-books, apparatus, and other supplies that may be needed, subject to approval by the borough board; have power to issue syllabuses in the various branches of study. It will be seen that the practical management of the schools, from the teachers' standpoint, is in the hands of the borough superintendents and their associates.

The character of this organization, with its division of powers and responsibilities, marks a distinct advance upon any other scheme that has been put into operation in the United States. It is greatly superior to

the Cleveland or so-called Federal plan because it escapes the dangers of a possible incompetent, corrupt, or political Director. It places authoritatively in the hands of the superintendents questions of detail relative to the management of schools, which, in the best managed schools, have always, by the implied consent of the Board of Education in those cities, been placed in the hands of the Superintendent. It reserves to the Board of Education control of all financial matters and locates responsibility for the expenditure of the vast sums of money which the people give to the schools. It places the school buildings in charge of a superintendent, who must be an architect of experience and standing, elected by the Board of Education. This superintendent nominates janitors from a properly "certified list of duly qualified persons"; he must approve all plans for new school buildings and for additions to school buildings, etc., etc., etc.

The Board of Education has power to apportion the general school fund among the different boroughs. "The quota for each borough is one hundred dollars for every qualified teacher who shall have actually taught in the schools of the borough for a term of thirty-two weeks of five days each. After apportionment shall have been so made, the remainder of the general fund shall be apportioned among the boroughs in proportion to the aggregate number of days of attendance of the pupils, resident therein, between the ages of five and eighteen years." This has a local significance and is intended to be an improvement upon the present method of apportionment in the territory covered by the Greater New York. An interesting matter connected with this apportionment is the power that is specially conferred upon the Board of Education to direct the comptroller to withhold from any borough school board any part of the moneys apportioned to the latter upon the basis of the number of teachers employed in any school under its charge, "when the City Superintendent shall report to the Board of Education that the provisions of the State school laws or of this

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chapter, or the by-laws of the Board of Education in any way relating to such school or to its teachers are not being complied with." This is a tremendous weapon in the hands of the Board of Education.

The new Charter is an immense advance over existing conditions:

(1) It segregates all questions relative to the work of managing the schools, so far as the initiative is concerned—the appointment and removal of teachers, the course of study, and the tools with which the teachers work—into purely professional hands. With one exception—that of Cleveland—I believe that this is the first instance where such powers have been formerly conferred by statute or charter upon the Superintendent. It should not be forgotten, however, that for many years these powers have been held, with the implied sanction of school boards, by the superintendents of Washington (D. C.), Chicago, St. Louis, Kansas City, Denver, Omaha, Peoria, St. Joseph (Mo.), Springfield (Mass.), Brookline, Newton (Mass.), and many other cities. But such a formal departure in the charter for the Greater New York will have the effect to confirm these implied powers where they are exercised, and to point the way toward a desired segregation elsewhere. It is a gain and not a loss that these powers are to be exercised subject to the by-laws of the school board. It is infinitely better that these responsibilities should be divided and limited. Only the initiative responsibility should be in professional hands, while the school board, as a sort of jury, should act upon this initiative either favorably or unfavorably. Like the United States Senate, though they may refuse to confirm, they cannot themselves originate any nomination.

(2) It eliminates a vast amount of patronage by providing a definite plan by which teachers, principals, janitors, truant or attendance officers are to be selected. Proper safeguards are provided to prevent this patronage from becoming a perquisite of the superintendents and officers of the school board.

(3) It establishes a broad and rational plan for the licensing of teachers, and places this power wisely in the hands of a different body from that which nominates or that which appoints the teachers.

(4) It prescribes the minimum qualification that shall be possessed by the City Superintendent, borough superintendents, associate superintendents, supervisors of music, drawing, kindergarten, etc. It is impossible to overestimate the advantages of this prescription, though the section has been so broadly drawn as not to damage the interests of the city by its limitations.

(5) It secures for the individual boroughs which form the amalgamated city, local school government of a class which will enable the schools to make the transition without loss and with a distinct gain to themselves. It preserves the salaries of teachers and principals at a reasonable figure in a borough where the living expenses are abnormally high, and prevents an unnecessarily heavy burden from being placed upon the taxpayers by an equalizing of salaries in boroughs where living expenses are normal.

(6) It abolishes the vicious trustee, or subcommittee, government. That Brooklyn is permitted to retain it in a modified form is a loss to Brooklyn, but it will furnish a gigantic object lesson which cannot fail to be of great value. That there are wise and good and helpful boards of trustees and local committees is a truism. That the system itself is an incubus to the schools is evident to any candid observer. The system does not exist west of the Alleghanies. In its various forms, as existing in Pittsburg, Philadelphia, Boston, and other New England cities, it is a dead weight which prevents the energies of the community from being profitably expended and directed.

(7) It gives scope for individual excellence by formally giving permission to borough boards to regulate and fix salaries of members of the teaching staff "by merit, by the grade of class taught, by the length of service, or by the experience in teaching of the incumbent in charge or by such

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a combination of these considerations as the school board may deem proper." "Said salaries need not be uniform throughout all the several boroughs nor in any two of them, nor throughout any one borough."

(8) The principal is given a seat, a voice, and a vote in the board of borough superintendents when matters relative to said principal's school are being considered by said board. This is a particularly wise provision, which should find its way into the charter of other cities of the first class.

(9) It places the financial responsibility in the hands of the Board of Education, and secures for the least favored borough the same high class of school buildings, supplies, furniture, and appurtenances that are enjoyed by the richest and most influential borough.

(10) It assures the domination of the Board of Education to the boroughs of Manhattan and the Bronx (the present city of New York), and thereby provides that, for a considerable space of time, sufficient to get the new creation under weigh, the carrying out of the provisions of the charter shall be in the hands of its friends.

(11) While the charter does not provide for a sufficient number of associate superintendents to perform properly the work devolving upon them, it is provided that the Board of education shall have power "to modify the basis of the number of teachers upon which the borough boards may appoint associate superintendents," which will permit such additions to the number of associate superintendents in any borough as experience may find necessary.

(12) The special teachers and supervisors are assigned to their duties by the borough superintendent, and assume their proper relation as assistants in a special department. It is further wisely provided that the special teachers in special branches "shall be responsible to the principal of each school for the performance of their duties therein."

(13) The Board of Education and each borough school board may sit as a trial court in an investigation of charges relative to the misconduct of any employee, administer oaths,

compel the attendance of witnesses—their judgment "shall be final, except as to matters in relation to which, under the general school laws of the State, an appeal may be taken to the State Superintendent of Public Instruction."

(14) The promotion of members of the teaching staff must be upon the nomination of the board of borough superintendents made to the borough school board.

(15) Full power is given the borough school board to establish kindergartens, manual training, trade schools, high schools, evening schools, teachers, training schools; they may also maintain free lectures for working men and working women.

(16) On the business side, the Board of Education, by placing in the hands of a superintendent of supplies, a superintendent of buildings, and a superintendent of schools, the manifold details arising in these departments, escapes the worry, irritation, and annoyance which a discussion over such trivial matters always brings to the members of the board. As a result, the members of the Board of Education will have ample time to discuss great questions of school policy, and lend valuable aid to the solution of many vexed questions relative to the schools.

(17) The chapter upon the licensing of teachers is a valuable contribution to school administration. It defines the minimum qualifications which the four members shall possess, who, with the City Superintendent, constitute the Board of Examiners, in such a way as to secure competency on the part of the board for its delicate task. This is all the more necessary, as "no borough superintendent, associate superintendent, principal, or teacher in the city of New York shall be allowed to serve on the Board of Examiners." "The borough school board shall have power to fix the standard of qualification as a necessary requirement for the service of all principals and teachers in the high schools and schools of the borough, which requirement may be higher, but not lower, than the minimum qualifications established by the Board of Education."

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It makes it possible for teachers of the highest class and the best qualifications, outside the city, to seek a position in the Greater New York without undergoing the humiliation of a formal examination. "Graduates of colleges and universities recognized by the Regents of the University of the State of New York, who have pursued for not less than one year pedagogical courses therein; graduates of schools and colleges for the training of teachers, approved by the State Superintendent of Public Instruction; and teachers holding a State certificate issued by the State Superintendent of Public Instruction since the year 1875, or holding a college graduate's certificate issued by the same authority, *may* be exempted, in whole or in part, from such examinations at the discretion of the City Superintendent." Such a clause, with limitations suitable to the environment, should find a place in the charter or by-laws of every city board of education. Such a clause would go far toward strengthening many teaching staffs, which now, by reason of Chinese prescriptions, in the form of examinations at inopportune times, and various other devices, are being steadily weakened by the necessity of relying upon local talent to fill every vacancy.

The greatest weakness of the Charter is in the composition of the central Board of Education; it will always reflect the ideas of the borough boards, when it ought to be so organized that its influence would permeate down through the borough boards.

The City Superintendent, under this Charter, has no power over the boards of borough superintendents, except to call them together—no opportunity to impress his ideas upon the schools. He may visit the schools (there will be upward of eight thousand teachers in the Greater New York), "but he shall have no right of interference with the actual conduct of any school in the city of New York."

It is difficult to see why "any borough superintendent or any associate superintendent may be removed for cause at any time by a three-fourths vote of all the members appointed to the school board by which he was appointed," unless the

clause quoted indicates a compromise between the friends and enemies of some fortunate or unfortunate individual now in office. The salaries of teachers and members of the teaching staff, including the superintendents in each borough board, should be fixed by the Board of Education. The power to suspend a teacher by the principal in any school should be exercised only by permission of the borough superintendent. The power to establish separate schools for colored children, where there is such small need for such a policy as in the Greater New York, should not have been conferred.

The City Superintendent in Greater New York cannot be expected to exercise many of the functions which are within the province of the superintendent in smaller cities. His position is analogous to that of the United States Commissioner of Education. The influence of the office will be great or small according to the caliber of the man who is first selected to fill the position. If he has a grasp over the conditions involved in the problem of education in our cities, and education in its complex theoretical relations, and does not allow himself to be lost in a maze of detail, his power for good and his influence upon the schools will be great. A second-rate man would speedily degenerate into a first-class clerk. The problem of supervision in the Greater New York, with its traditions, its vested educational rights, its peculiar environment, its educational customs and privileges, cannot be solved by any existing systems or methods. Until now, it has hardly been possible to state the terms of the problem with sufficient clearness to attempt to formulate them in terms of an equation.

The new charter makes it possible to begin work upon this solution; by its terms every teacher and principal now in the schools has protection and consideration. It may be reasonably expected that every member of the teaching force will ultimately lend his efforts to assist in the solution which means so much to him and to the schools.

To interpret properly the charter for the Greater New York, it should be studied from different standpoints—the

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standpoint of existing charters in the subdivisions constituting the new city, the standpoint of the needs of the schools, the evils to be remedied; the standpoint of the reformer, who desires the charter to represent a high type of solution of the vexed problems which encompass the whole question of bettering the schools; and, finally, it should be observed from the standpoint of compromise—*i. e.*, what real advance could be made by a commission representing conflicting views, imperfectly acquainted with the terms of the problem, to a certain extent pioneers in the work, and confronted continually with the fact that their work had finally to go before the people or their representatives in the Legislature. Any rational reform must (1) segregate, at least so far as initiative is concerned, the purely professional side of the schools—the shaping of the course of study, the assignment and transfer of teachers, the promotion, graduation, and transfer of pupils into professional hands; (2) so arrange the business administration that the members of the Board of Education may attend to these details without devoting an undue amount of time to the public service; (3) establish a freedom among teachers and principals, within certain broad limits, which freedom is necessary to prevent a blind following of the dictum of the school officer in charge. Each valid scheme of reform should develop in a line with the spirit and environment of the community. A plan might be admirable for a comparatively new community, which had no traditions and no vested educational rights, which would not do at all in New York, Philadelphia, or Boston.

Every reform movement must run the gantlet of criticism, and be tempered and ameliorated by the spirit of compromise. A glance backward after the lapse of years will not infrequently carry with it the conviction that the reform, as affected by compromise, was distinctly bettered by that compromise. Reformers are not always content to have the essential elements of their reform accepted by the people; they often grieve that comparatively unimportant non-essential elements are rejected. Perhaps they could not be re-

formers in action if they always clearly distinguished between essentials and non-essentials.

At a very early stage in the movement for reform which has culminated in this charter an insane delusion seized hold of many teachers and principals. They saw, or professed to see, in this movement a scheme to drive them out of the schools to make places for the friends of those who were championing these reforms. Living in an atmosphere which had been redolent of the odors of the vicious patronage system, it is not surprising that rumors of the intention to make wholesale removals should spread and become epidemic. Then, again, change in existing conditions did not hold out any hope to the great mass of the teachers. The wildest rumors were current among them. It grew to be believed that every teacher and principal was to be re-examined as a test of her fitness and worthiness to continue in the schools. It grew to be believed that wholesale transfers of teachers from the schools in which they had long been factors were to be made. Good men and wise men believed that it was better to bear the ills they had than to tempt fortune by change. Then, again, New York, the most cosmopolitan of cities, is in many respects the most provincial. Why should New Yorkers go outside their city to investigate what is done in other localities in any department? Is not New York the center toward which the best, ablest, and most highly developed men in every department of life's work inevitably gravitate? Does not New York have the best of everything? Then, again, the unwise and extreme utterances of some of the friends of reform, relative to the caliber and quality of the teachers and the character of the work done in the schools of New York and Brooklyn in no wise tended to allay this irritation. It would be an unexampled condition of affairs if there were not a great many incompetent teachers in the teaching corps of New York and Brooklyn. Not many years ago the city superintendent of Philadelphia stated, at a meeting of school superintendents held in that city, that there were upward of seven hundred incompetent

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teachers in the schools of that city, out of a total of about twenty-eight hundred teachers. Intelligent observers of school systems over the country believe that the same statement could be relatively applied to the schools of any other city in the United States. Indeed a similar statement might be applied to the members of the legal profession in any city, or the members of the medical profession, or the employees of any great mercantile or industrial corporation. I once asked the superintendent of a city whose schools are famous for their excellent work, and where favorable conditions have existed for a long series of years, the question: "If you were to leave this city, and go to a city of similar size, and have full power to select your teachers, how many teachers of your present corps of 320 would you take with you?" He reflected for a moment, and said: "I would not want to be forced to take more than 120 of them." The lesson of this is that about 33 1-3 per cent. of the teachers in the most favored school systems are excellent teachers; from 30 to 50 per cent. are average and good teachers, and the remainder are below the average in everything that goes to make up the ability to do the right kind of work in school. The ability, character, and honesty of the principals in New York and Brooklyn will at least bear favorable comparison with the principals in Boston, Chicago, St. Louis, San Francisco, Cincinnati, Cleveland, Detroit, and other cities. There are just as good schools in the territory of the Greater New York as can be found in other cities. There are just as poor schools. The teaching force compares favorably with that of other large cities. The pressure and conditions under which teachers and principals have worked in the territory of the Greater New York have been such as to require greater skill, tact, persistence, and energy to produce good schools, than were required elsewhere to bring about similar good results.

But under the old conditions a very good school was largely the result of fortuitous circumstances; the able, conscientious principal stood alone in his efforts to better his

school. He could not materially strengthen his corps of teachers, on account of the vicious trustee system; he could not get any help from the superintendents, because there were too few of them to have any knowledge of the conditions in any individual school; and had they been numerous enough, they had no power to bring about the necessary changes. Under the new charter it will be possible to strengthen the teaching force in any individual school to such an extent as to bring up the weaker schools to a much higher level.

In any organization certain elementary prescriptions are necessary that we may keep in a definite plane of effort. But within this organization and its prescriptions there is really a greater freedom for the individual than there would be outside this organization—*i. e.*, where there is an imperfect organization or no organization.

Viewing questions from different standpoints, there is always more or less antagonism between principals and the superintendent; this feeling exists in Boston, St. Louis, Chicago, Cincinnati, for instance, to just as great an extent as it does in Brooklyn and New York. It is as absolutely necessary for this antagonism to exist in a school system to produce the best results as it is for friction to exist in order that we may move a railway train. But the friction may be so great that it will stop the train. To a foreigner, the complex relations existing between our general government, State government, county, and municipal governments are difficult to understand. He cannot see how it is possible to escape continual and dangerous collisions. But to us the adjustment and operation are perfectly simple.

Just so with the relations between superintendents, principals, and teachers. Far from desiring to weaken and destroy the power and responsibility of the principal, the wise superintendent seeks continually how he may increase that power. So the wise principal seeks to strengthen the hands of his teachers, that they may lean on themselves and leave him free for other duties. The end of all supervision is to

bring about such a condition among the supervised that they will not need supervision, will be self-supervised, self-determined. The legitimate and local end of discipline in a school is such wise restraint as will lead inevitably to wise self-restraint.

Under this charter for the Greater New York, both principals and teachers have much more freedom and power than under the old conditions. For every restriction imposed, other restrictions have been removed. It is susceptible of demonstration that, so far as selecting their own teachers, for instance, is concerned, the principals in Cleveland and St. Louis, and Chicago and Kansas City, have even more freedom than they do in Brooklyn at present. In the cities mentioned the principal confers with the superintendent, in Brooklyn with the local committee of the board.

Under the new charter the principal will confer with the superintendent who has charge of his division, or with the board of borough superintendents. The same parallel may be drawn in other directions. Nevertheless, it is not at all strange that many principals could not make up their minds beforehand that the net changes would be an improvement upon the existing order. Their doubts and misgivings were no greater than that of the opponents of the adoption of the Federal Constitution one hundred years ago. I believe that an impartial, dispassionate judgment from the opponents of many charter provisions, during the process of their construction, will cordially commend the completed charter long before it goes into effect.

To the short-sighted, enthusiastic reformer in other parts of the country, who has expected the charter commission to blaze the way for general reform in the organization of school governing boards, the charter is a disappointment. Few cities in America have in their midst the conditions typified in the Greater New York, which conditions led to the creation of the borough boards and the central Board of Education. Chicago, with its distinctive West Side, South Side,

North Side, and outlying territory, is a good field for such an organization. Boston, with its aggregated additions—East Boston, South Boston, Charlestown, Roxbury, Dorchester, Brighton—might profitably consider such a plan. In most other cities the borough board of education would be a step backward. To the reformer in New York and the annexed territory, who has had a clear vision of the needs, and a rational plan by which these ends could be secured, the new charter has much in it to commend, and any careful student of accomplished reforms will be thankful that so much real progress has been made, and that the way is clear for added meritorious features, when the need of these added features is apprehended.

The nondescript, inefficient organization of the Brooklyn borough cannot long exist alongside of the better and more efficient organization in the other boroughs. Conditions in Brooklyn, over which neither the friends nor the framers of the charter had any control, profoundly influenced the apparently factious opposition which succeeded ultimately in depriving that borough, temporarily at least, of the benefits which should have come to it. Fortunately, the way is clear for the change when conditions are more favorable.

To anyone conversant with the different schemes which have come to the surface in sections of the territory of the Greater New York, having for their object the aggrandizement of some individual or set of individuals, it may be readily understood why certain aggressive spirits in the schools have resolutely opposed any and all changes whose ends and aims were not apparent. The prevalence of this feeling greatly added to the labors and difficulties and responsibilities of the framers of the charter. The dignity and power of the principal and teacher have been greatly and wisely increased by the provisions of the new charter. They have been freed from burdens which, though they may have pressed down upon them unequally, were nevertheless a great hindrance to successful and rational effort. And when the charter formally passes through its legislative stages,

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	NEW YORK.	BROOKLYN.
Population	1,960,000	995,277
School population. 1895, 5–21 years	540,000	260,000
" " 1896, 5–18 "	say 490,000	say 230,000
Enrollment in public schools (including corporate)	287,332	148,327
Average daily attendance	192,858	103,858
No. of teachers, including principals	5,118	2,708
Total number of schools	329	114
Total number of school buildings	160	111 owned, 5 rented, 116
Value of school buildings and sites	$20,166,890 00	cost $9,573,772 00
Average expenditure for pupil, year 1895	$23 11	$23 02
Total expenditure for all purposes, 1895	$6,112,227 71	$3,485,608 19
Amount paid for new buildings, sites, furnishing, and repairs in past year	$1,074,412 74	$788,314 82
Amount of State School tax paid by City, County, or Town	$1,857,373 25	$493,683 98
Amount received from State School funds	$693,771 62	$421,998 15
Amount raised for School purposes by local taxation	$5,092,495 14	$2,553,094 81
Total receipts from all sources	$6,989,356 12	$3,609,518 93
No. of school districts	35 inspection dist's.	1
Total amount of teachers' salaries	$3,573,865 10	$2,154,655 77
Total amount of janitors' salaries	$181,014 12	$107,256 45
Total amount of superintendents' and clerical officers' salaries	$59,292 71	$52,350 00
No. of Grammar Schools	49 Boys, 49 Girls, 23 mixed, 121	35
No. of Primary Schools and Departments	132	including intermediate, 56
No. of Corporate Schools receiving public moneys	44	11
No. of Evening Schools	31	3 evenings per week for nine weeks, 12
No. of High Schools	4 Evening High Schools 0	3
No. of Normal or Teachers' Colleges	1 with 1,921 pupils	1 with 145 pupils
No. of Public Kindergartens	17	3
No. of Pupils in Grammar grades	84,111	36,386
No. of Pupils in Primary grades	142,600	including intermediate, 78,792
No. of Pupils in Evening Schools	32,895	7,223
No. of Pupils in High Schools	0	2,998
No. of Pupils in Corporate Schools receiving public money	28,028	4,625
No. of Superintendents and Ass't Sup'ts	16	3
No. of Principals not teaching	273	including Heads of Departments, 229
No. of Male teachers, including Principals	749	142
No. of Female teachers, including Principals	4,475	2,629
No. of Teachers in Grammar grades	1,996	904
No. of Teachers in Primary grades	2,187	1,476
No. of Teachers in Evening Schools	498	192
No. of Teachers in High Schools	103 in Evening H. Schools 0	99
No. of Teachers in Corporate Schools (above)	305	79
No. of Teachers of special subjects	129	40
No. of Ungraded except by State	0	13

The College of the City of New York has 1,314 students, and the Nautical School has 72
The town of Hempstead receives $12,000 per annum from the "Stewart Fund." It is
tricts which are cut by the Greater New York line have school bonds outstanding.

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LONG ISLAND CITY.	RICHMOND COUNTY.	NEW-TOWN.	FLUSHING.	JAMAICA.	PORTION OF HEMPSTEAD.	GREATER NEW YORK.
35,745	53,452	19,776	20,816	17,654	say 10,000	3,112,719
12,500	15,094	6,752	7,307	6,807	3,372	851,832
11,300	12,975	8,161	5,874	5,786	2,751	766,847
8,119	9,923	5,592	3,284	4,587	1,900	469,064
5,615	6,000	3,615	2,317	2,814	1,148	318,225
155	169	85	68	89	36	8,428
14	29	17	14	39	19	575
{ 9 owned 5 rented, 14 }	29	17	10	20	10	376
$649,500 00	$519,900 00	$171,995 00	$169,600 00	$242,714 00	$128,260 00	$31,622,631 00
$17 05	$15 63	$14 59	$18 75	$17 27	....	....
$150,443 72	$353,452 00	$105,860 24	$60,800 10	$237,980 97	$46,582 44	$10,552,955 37
$31,326 93	$166,695 24	$38,673 65	$8,692 54	$148,839 85	$13,510 90	$2,270,466 75
$20,146 47	$25,072 90	$7,793 97	$8,395 16	$11,709 52	say $4,000 00	$2,428,176 25
$21,250 43	$23,122 90	$10,751 05	$10,820 23	$12,638 89	$4,589 75	$1,198,943 02
$112,000 00	$144,767 56	$73,475 37	$42,448 34	$88,939 25	$25,336 61	$8,132,557 08
$133,250 00	$392,700 02	$131,149 55	$72,633 82	$320,277 31	$50,360 98	$11,699,246 73
5	29	14	8	11	7	....
$86,504 10	$117,561 79	$46,652 41	$36,954 37	$49,761 41	$20,544 75	$6,086,499 70
$11,900 66	....	....	....	....	....	....
$3,915 00	{ $1,600 00 o except Comm'r }	$700 00	$3,500 00	$3,400 00	0	....
6	....	....	....	12	5	....
13	....	....	....	23	10	....
0	0	0	0	0	0	....
0	0	0	0	0	0	....
1	3	0	1	4	3	....
0	0	0	0	1 State	0	....
0	1	2	1	1	1	....
1,511	....	....	....	....	....	....
5,941	....	....	....	....	....	....
0	0	0	0	0	0	....
177	0	0	....	....	....	....
0	0	0	0	0	0	....
1	1	0	2	2	0	25
8	0	0	0	0	0	510
7	31	10	7	2	6	954
148	138	75	61	87	30	7,643
45	Grades Mixed	....	....	....	....	....
97	" "	....	....	....	....	....
0	0	0	0	0	0	....
6	....	0	5	7	4	....
0	0	0	0	0	0	....
0	2	0	3	4	0	....
0	10	17	10	....	....	....

students.
divided twice a year, on the same basis as the State funds, under special acts. Several of the dis-

and becomes a law, we shall see the era of mutual recrimination give way to an era of good feeling.

The framers of the charter are to be congratulated upon the evenness and balance of their work. They have never lost sight of the fact that the management of the schools should be left in the hands of the people, through their representatives. While power has been conferred upon the employees of the board, it has properly been, in the main, the power to initiate and not to accomplish. This is the method of the business world—the board of directors in a corporation elect a president or general manager, to whom the power to operate the various branches covered by the business is delegated. The owners of a property never allow *carte blanche* to their officers without courting disaster. It is better for the manager of such properties, and better for the owners, that there should be a distinct separation of their duties and a definite responsibility.

The framers of the charter have retained the good features of the old organization, and have constantly had in their minds these two principles: (1) that of definitely fixing responsibility; (2) that of steadily lessening the friction which would otherwise be a clog to a proper development of the full power of the organization. They have rewarded no friends, punished no enemies; their work will be an incentive to the friends of constructive reform and a source of pride to all factions in the Greater New York.

FRANK A. FITZPATRICK

BOSTON, MASS.

VII

REVIEWS

The school of Plato—By F. W. BUSSELL, Fellow and Tutor of Brasenose College, Oxford. New York: The Macmillan Company, 1896. 346 p. $2.75.

Philosophy, like all the sciences, as well as economic industries, suffers all the evil and enjoys all the good that comes from a division of labor. Once she was the queen of the sciences, says Lotze in a fine passage; and this position gave her as commanding an interest as she had influence, and her duty was to expound all the general principles of religion, art, literature, and politics, as well as the foundations of knowledge. But the enlargement of scientific territory and the division of labor have changed all this. Philosophy has become a technical science, limited almost wholly to theories of knowledge and metaphysics, and enlivened occasionally by remarkable illustrations from psychology. In most of the treatises upon it, we should discover few traces of that insight into its intimate relation to religion and politics which was its original reason for existence. Plato reads very differently from Kant. Plato is the delight of all readers in all ranks of thought, while Kant, in spite of his great work in philosophic fields, comes near inviting the judgment that Milton had to repel when he said that "philosophy is not harsh and crabbed as dull fools suppose." But the present writer has done something to restore a forgotten interest in the subject. He has put life in the dullest metaphysical problems. What he shows is the closest connection of conception and interest between the obscure problems of Greek philosophy and the religious and political life of the time. It is not often that the student has impressed upon him the intimate relation between Eleatic or Platonic metaphysics and the struggles in Greek moral and political life, or between the atomism of Democritus and modern individualism, as reflected in religion and politics, as well as in eco-

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nomics. But Mr. Bussell succeeds in doing this, and in a way that makes us think that he has discovered a lost art.

The title is rather misleading. It would imply a treatise upon Plato and his philosophic school. But the work is far from this, except in so far as that philosopher furnishes the key to Greek thought. It is in reality a book on every phase of ancient philosophy and its relation to the general tendencies of modern times, and the title is only the appropriation of a brilliant name to give the general setting of the author's problem and sympathies. The great value of the book lies just in this free and liberal way of treating the subject, and the comprehensive simplicity of the problems here discussed. Philosophy once more has a general interest, and shows, in the author's treatment, how profoundly common life and thought are influenced by conceptions which seem very technical to the student, but, when metamorphosed into the real problems of the age, show the immortal questions of morality and politics in their unfading colors, and with their permanent importance.

Mr. Bussell's assertion is that the history of philosophy gets its whole meaning from the inherent tendency of all development to sustain and increase the importance of the individual. He shows how Eleatic monism and Stoic pantheism could not suppress the idea, and that Greek life, though constantly associated with strong government, could never overcome this tendency, and was, in fact, a struggle to attain the position where the individual counted for everything. In stating his position, Mr. Bussell uses an expression which will frighten this altruistic age. He says: "The ultimate motive is, of course (I need not waste words over a fictitious altruism!), a selfish one; and the impulse to speculate is either curiosity or the satisfaction of a moral need." The bold confession of "selfishness" as the basic principle of human progress, after all that Mr. Spencer has shown regarding the value and growth of altruistic sentiments, seems paradoxical, not to say shocking. But it is less harmful than it seems. The author does not mean it in its most objectionable sense, as is distinctly indicated by his relation to Christianity, which he regards as giving the key

to the meaning of the whole intellectual and moral movement of the race. This point of view, however, is not obtruded upon the reader. In fact, the author's sympathy with Christianity does not indicate where he stands theologically, and so little does he seem to be determined by dogmatic considerations in these sympathies, that they have usually to be read between the lines. The "selfishness" which he boldly places at the basis of evolution is not the ordinary form of it, but is nothing more nor less than Green's self-realization, and Kant's personal worth, or man as an end in himself. But, barring his incautious language, there is such a clear and vigorous statement of the general tendency of history that one wonders, comparing the usual run of books, whether he is reading philosophy at all. To me it is as interesting as Pater's *Plato and Platonism* and Bryce's *Holy Roman Empire*. For those who wish to get the practical meaning of philosophy the book is very instructive and inspiring. Yet one cannot suppose that he knows all about philosophy after reading the book. He will look at the subject superficially if he does. He may acquire a real interest in it and a desire to know more about it, but he will have to master the very works whose style and method are here eschewed. This is not to say that Mr. Bussell's book is superficial, but only that it does not gratify the desire of the technical and scientific student. It is simply a work to awaken great and comprehensive thoughts, which may leaven life with aspirations while it lays bare the unconscious tendencies of the past.

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The intellectual and moral development of the child. Part I. Containing the chapters on perception, emotion, memory, imagination, and consciousness—By GABRIEL COMPAYRÉ, recteur of the Academy of Poitiers. Translated by MARY E. WILSON, member of Graduate Seminary in Child-study, University of California. New York: D. Appleton & Co., 1896. International Education Series. 298 p. $1.50.

Probably no other French writer on education is so well known in this country as Gabriel Compayré, recently appointed to the rectorship of the University of Lyons.

In 1893 he published his *L'évolution intellectuelle et morale de l'enfant*, the first half of which has just appeared in an English translation. The reputation of the author, the timeliness of the subject, and the popularity of the series in which his work has appeared, will give the book a wide circulation, whatever its intrinsic merits, and these are by no means slight. M. Compayré is himself a student of history and of educational philosophy and theory, rather than a scientific student of childhood. This fact is reflected in the work. His book is a compilation, covering the general fields of movement, special senses, emotions, memory, imagination, consciousness, imitation, reason, language, the sense of right, and so forth. The authorities cited are standard writers of the period before 1885. The writer draws largely on Perez, Preyer, Egger, with frequent references to Locke and the older educational theorists. Mr. Compayré says, in a note on p. 2, that the body of the work was arranged sixteen years ago, in 1880, but that he has profited by much that has appeared between that date and 1893. As one goes through the book, however, he is impressed with the fact that very few of the experimental and quantitative studies of the last ten years are noted in its pages. This is the great defect of the book. Its virtue is that it gives relation and proportion to the scattered and disconnected fragments of work in child-study carried out all over the country. One who consults it for suggestions, however, or for directions as to methods of study, or for the results of the investigations of the last ten years, will come away disappointed.

The translation has been very faithfully done, and in a careful comparison of several chapters with the original I have found nothing in it to criticise. Even the notes have been translated with perfect fidelity, but the reader of to-day would be grateful for some additions to their number. For instance, to the note on p. 19, which gives the principal works on child-study, but shows no title later than 1880, the translator might well have added some of the leading contributions of the last sixteen years.

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FOREIGN EDUCATIONAL PERIODICALS

Revue Internationale de l'Enseignement, February 15, 1897

L'Enseignement de la chimie medicale en Allemagne et en France, by L. Hugounenq.—In Germany chemistry is the only one of the sciences auxiliary to medicine represented by a chair in the medical faculty. There medical chemistry is narrowly defined, and means the study of the chemical modifications produced in the human body by medicines and poisons. Many students do not get a sufficient knowledge of physiological chemistry, for, in most institutions, the instruction is incomplete and the equipment inadequate. In France the situation is quite different. The instruction in this subject is well organized and is insisted upon. The article contains many interesting and useful points of detail.

Les Étudiants Americains en France, by Raphael Georges-Levy.—This important article is discussed editorially in this issue of the REVIEW.

L'Œuvre scholaire de la jeune Hongroie, 1868--96, by J. Kont.—In this second and concluding paper the writer traces the recent progress of elementary education in Hungary.

Revue Internationale de l'Enseignement, March 15, 1897

Un Réformateur de l'Enseignement, by G. Monod.—A sketch of Emile Frédéric Rieder, born in Alsace in 1828.

Les observations d'un pédagogue allemand sur nos écoles, by Louis Weil.—Professor Hartmann of Leipzig was commissioned by the Saxon minister of public instruction to study the schools of Switzerland and of France, especially the teaching of modern languages, and the present article is a review of the book that contains the results of Hartmann's observations.

La Réforme du baccalauréat classique.—This is a report presented to the Society for Higher Education, by M. Picavet, dealing with the details of the examination for this degree.

EXTRACTS FROM EDUCATIONAL REPORTS

President J. G. Schurman, Cornell University, . . . Report for 1895-96

The method of admitting students on approved credentials is the rule at Cornell University. As against 5 per cent.

of new students entering the University by means of examinations, 52 per cent. are admitted on school certificates and New York Regents' diplomas and 21 per cent. on college certificates, while of the remainder 15 per cent. consists of law students, for whose method of entrance statistics are not available, and 7 per cent. of special students who are admitted, without examination, on the recommendation of heads of departments. The method of admission on approved credentials is a great convenience to students; and it must be remembered that the students of Cornell University come from practically every State and Territory in the Union, and that even in the 57 per cent. whose residence is in New York State, every county of the State is represented. There are two other considerable advantages of the system. In the first place, it insures equitable and considerate treatment for every matriculant individually—his scholastic record being furnished by the person who knows him best, his teacher. And, secondly, by this recognition of the work of the high schools and academies, the University is brought into close, intelligent, and mutually beneficial intercourse with them. Everything that makes for freer and more cordial relations between the secondary and the higher institutions of learning should be sedulously cultivated. At Cornell University, especially, which has no private academies in affiliation with it, but draws four-fifths of all its students from the public schools, which are the people's schools, this object is of unusual significance, and fortunately it is also congenial to the spirit and traditions of the University.

A slight modification of the system, for the meantime at least, has been found necessary. English has been withdrawn from the list of subjects in which students are admitted by certificate from schools; and it seems not unlikely that Regents' diplomas will, in the near future, be accepted with the same reservation. Whether the system needs further restriction is a question that must constantly be kept in view.

Superintendent Clarence F. Carroll, Worcester, Mass. . . . Report for 1896

No one acquainted with the work of the kindergarten can doubt that the training here received by both the rich and

the poor has an economic and moral value affecting the city not less directly than that given in the high school. The cost of the pure kindergartens for the last year was $4159.42. The cost per pupil in the pure kindergartens was $33.11, which is $5.23 more than the cost per pupil in the other schools. To find the net cost of pure kindergartens, a considerable deduction should be made from the figure above ($4159.42), because many children remain in the pure kindergarten after they are five years old, at which time they become of regular school age.

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Within the last ten years, physiology, nature-study, gymnastics, and manual training have been added to the curriculum. In consequence of these additions, and of the more careful training needed by teachers, it has become the fashion to say that the course of study is overcrowded. If this is true, this committee has a plain duty, that is to relieve the curriculum of some of the subjects which it now includes. Before going further it should be added that no subject has been added to our curriculum during the last five years, and that all the subjects prescribed in our present course of study are required by law, except nature-study and gymnastics. This point is often overlooked by some who believe that teachers and children are required to do more than we can reasonably ask them to attempt.

One other well-known fact should be taken into account in considering this question. In cities and towns west of New York, what is known as our ninth grade is practically unheard of. In other words, children fit for the high school in eight years, while we take nine to accomplish the same thing. The Report of the Committee of Fifteen recognizes but eight grades, and Dr. Harris, who wrote this Report, is recognized as being, at least, safely conservative.

From this it would appear that our ninth grade is either an expensive luxury or else that we are wasting time. You ask if we could abolish our ninth grade and send pupils from the eighth grade directly to the high school. I should reply that this would be entirely practicable at the end of a few years. Such a step would undoubtedly be an advantage to those

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who are going to college. On the other hand, the common schools are the colleges of the great mass of children who cannot even enter the high school. On their account we should be very cautious in taking such a step. Moreover it would be possible so to enrich the ninth curriculum as to make it one of the grandest years in the history of every child.

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There are several radical evils in our civilization that seriously affect the success of the individual pupil. These same evils will soon seriously affect the standard of our citizenship. I need scarcely enumerate these vices, but the pupils in many schoolrooms in our cities are withered and blighted under our very eyes, and no voice is raised in warning. It is not a question of sentiment so much as a question of citizenship. It is a business proposition, that we should consider seriously, whether we should passively allow the life of half the boys of our public schools to be sapped, and drugged into stupidity by bad habits. We yearly graduate a crop of young criminals to the reform school and the truant school. We do well to acquaint pupils even to a limited extent with their own bodies, but our present teaching in physiology is but a poor apology and has received but the feeblest moral support from the community.

VIII

EDITORIAL

One of the most promising of the advances made in New York by the reform Board of Education is the provision for public high schools. It has long been a disgrace to the metropolis that none but the children of those families who could afford to pay heavy tuition fees to private institutions were able to secure a good secondary education. The two so-called colleges maintained at public expense, the City College for boys and the Normal College for girls, are part high school and part college; but, because of the very meager, but long drawn out, elementary school course upon which they have rested, it has been impossible for them, even with the best intentions, to do for New York what that great city most needs.

The new school law expressly provides for the establishment of high schools, and the Board of Education has gone about the work with intelligence and vigor. Commissioner Taft, chairman of the committee on high schools, has himself been a high-school teacher, and he fully recognizes the essential part that secondary education plays in a well-organized school system. Dr. Marble, the chairman of the committee of the Board of Superintendents on the same subject, is, of course, a powerful and effective ally in such a movement.

It has been determined to establish three high schools in the autumn, using temporarily buildings that are now under the control of the Board of Education, in order not to postpone the opening of these schools a day longer than is necessary. Of course, all high schools should be for boys and girls alike, but it is understood that the plan in contemplation provides one boys' high school, one girls' high school, and one mixed high school. The legislature has passed a bill that will, if approved by the Governor, put $2,500,000 at the disposal of the Board of Education for the erection of four buildings

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planned especially with reference to high-school work. If it falls to the lot of the present committee on buildings to oversee the plans and the erection of these structures, it is quite safe to predict that they will be among the best in the country.

For appointment to positions in these schools applications have poured in by the hundred. The majority of the applicants are unworthy of serious consideration, but among the number are some of the strongest and best secondary-school teachers in the country. Others who are not willing to apply for appointment, but who very properly prefer to stand on their record and reputation, have been urged for appointment by their friends; and a number of such men and women will unquestionably be considered before the appointments are made. Too much care cannot be exercised in selecting principals for these schools. Scholarship, tact, and constructive ability are needed, and they are needed badly. New York has no high-school experience to fall back upon, and its high-school problems are involved and difficult. The authorities would make no mistake whatever if they should lay down, informally at least, two rules for their guidance in making selections for principals and teachers in these schools. No one should be considered who is not (1) a graduate of a college in good standing, and who is not (2) now successfully engaged in secondary-school work. New York State requires that elementary-school teachers in its cities shall all have a high-school education, and New York city should apply the same principle, and insist that its high-school teachers shall have had a college training. Otherwise the schools will lack scholarship from the start. The second condition is no less important. It shuts out at once itinerant educational adventurers in search of a job, ambitious superintendents who want an increased salary, and elementary-school principals, who urge as a qualification for undertaking this new and delicate task the somewhat equivocal claim that they "understand the New York boy."

In these high schools it is proposed to maintain from the beginning classical, scientific, modern language, and commer-

cial courses of study. A mechanic-arts course will be instituted as soon as a proper building can be provided; though Principal Larkins and his staff have lately demonstrated, just across the river in Brooklyn, how a successful manual-training school can be organized and built up in an old and unsuitable building. The secondary-school courses that New York most needs are the scientific, the commercial, and the mechanic arts. The technical and commercial education of France and Germany must be imitated, and if possible improved upon, in the manufacturing and commercial metropolis of the United States. And by commercial education is not meant mere business arithmetic, stenography, and bookkeeping; but that adequate study of commercial geography, economic history, and trade conditions that is needed to make young men and women thoroughly useful in the conduct of a modern business, large or small. Great Britain has recently been frightened, particularly by German competition, into studying the problem of technical and commercial education, and the great city of New York cannot follow its example too quickly. This is one of the reasons why it would be suicidal to put a mere pedant or a narrow-minded pedagogue in charge of any of these high schools. They are big with promise for the future civilization of New York, if wisely developed and efficiently conducted.

Another important innovation, that makes for civilization and for decency, has been made in New York by the joint action of the Board of Health and the reform Board of Education. This is the systematic medical inspection of public-school children by a corps of 150 physicians, appointed for the purpose. The first examination was made on March 29, and the reports of the inspectors showed at once that the school children have not only been shamefully neglected, but have also been allowed to spread contagious diseases to an alarming extent. Certainly many principals and teachers must have been either densely ignorant or extremely negligent to permit such a condition of affairs as was found to exist. As a result of the first day's inspection, no fewer than

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140 children had to be excluded from the schools. There were found 14 cases of diphtheria, 3 of measles, 1 of scarlet fever, 35 of contagious eye diseases, 3 of mumps, 1 of croup, 8 of chicken pox, 8 of skin diseases, and 67 cases of parasitic diseases. The children with measles and scarlet fever were "peeling," and of course most liable to spread the contagion. One teacher appealed to the examining physician to send her entire class home, so filthy were they.

It is this sort of barbarous neglect that has been permitted to go on for years in New York without any movement for its abolition by the old régime. A new and intelligent administration construes its duty and responsibility differently, and hereafter not only will the great city's death rate be decreased, but the school children will be taught something of personal cleanliness and of care for the health of others that will do them more good than all the studies of the curriculum taken together.

President Gilman, who was president of the Baltimore School Commission—just ousted by the courts, unfortunately—has recently expressed, in a published letter, his views on the subject of city school administration. They are clear and accurate, and wholly in accord with the best modern thought. Mr. Gilman seems a little timid, unduly so, about enforcing his views, for they are sound not only for one community, but for all urban populations that wish to see their schools carried forward steadily, without political influence or personal "pulls."

The Legislature of North Carolina not only withstood the demands of the barbarians who wanted to cripple the higher educational institutions of the State, so that the sectarian colleges might be the gainers, but it increased the regular appropriation to the University twenty-five per cent., and that to the State Normal and Industrial School at Greensboro fifty per cent. This is wise and prudent legislation, and should be but the first step in an educational advance all along the line, both in North Carolina and in the South generally.

It is doubtless true that not more than a score of American teachers are regular readers of *Cosmopolis*, the monthly review published by Unwin of London, that divides its space almost equally between articles written in English, in French, and in German. Now that that review has demonstrated its ability to exist and to maintain high standards, it may be confidently recommended to those teachers who feel that they can afford but a single point of periodical contact with the contemporary culture of Europe. *Cosmopolis* is well edited and well printed. The articles in French and German enable American readers to keep up easily their reading knowledge of those languages, and the contributors are of the best. If we may refer to a single issue of *Cosmopolis*—that for March, 1897—it will be found to contain an unusually large number of articles that cultivated Americans should be glad to read. For example, there are papers on John Stuart Mill, by Sir Charles W. Dilke; on Current German Literature, by John G. Robertson; on L'Amérique Universitaire, by Baron de Coubertin; and on Türkische Reformen seit vierzig Jahren, by H. Vambery. In addition there are contributions of a more strictly literary character by Max Müller, Paul Heyse, I. Zangwill, and others.

The article by Baron de Coubertin on L'Amérique Universitaire is worthy of more extended mention, as it is a sympathetic and helpful discussion of some phases of our higher education. Our university life, the country over, is described as manifesting an absolute moral uniformity under the greatest possible material diversity. The universities are constitutional monarchies, so great is both the moral and the actual authority of the university president. The basis of the moral uniformity referred to is thought, by Baron de Coubertin, also to explain the readiness and ease with which foreign immigrants become Americans. It lies in the tacit acceptance, by Americans, of one view of life and one formula of action, which is this: Work is the universal law; putting forth of effort is the highest happiness; success is not an end in itself, but merely a means of attempting still higher; the individual has no value apart from his relations to the race; his own conscience is his only guide and his final judge;

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he toils with tremendous zeal and dies with resignation. To turn this formula into a body of doctrine, and to apply it, is the task that the American university has set before itself.

The universities are increasingly popular. Through the devotion of large bodies of deeply attached alumni, they are building up a respect for tradition and a spirit of fraternity, two sentiments that must carry far-reaching consequences in their train. The universities are also a powerful disciplinary force in America. The American people understand obedience and practice it to a wonderful degree. No other people have shown themselves so capable of self-discipline. The universities contribute powerfully to this condition. The American universities are not likely to influence France directly, in the near future, but they are now influencing it indirectly because of the part they play in shaping the life of a great nation that has intimate relations with Europe.

A recent article on some relations between French and American universities is that by the well-known publicist, M. Raphael Georges-Levy, published in the *Revue Internationale de l'Enseignement* for February 15 last. The attention of French university administrators has been directed for some time past to the fact, so strongly emphasized by Professor Wenley of Ann Arbor in his article contributed to the March issue of this REVIEW, that Americans, as a rule, go abroad to study in Germany, rather than in France, Scotland, or England. A strong movement has been set on foot in Paris, under the best auspices, to attract American students to the French universities, and M. Georges-Levy discusses the matter, in the article named, with clearness and force. His article contains a translation of a letter written to him by an American professor, making some practical suggestions for co-operation between the universities of France and those of America. More will be heard of this movement, it is quite certain, in the near future.

The Conference on College Entrance Requirements in History, which reported to the New England Association of Colleges and Preparatory Schools October 11, 1895, and

whose report, after slight amendment, was adopted, reassembled on March 17, 1897, to examine certain plans of a similar kind which had appeared since their report. After deliberation it unanimously passed the following votes:

Voted, That this Conference after careful comparison of the proposals of the New York Conference on requirements for entrance examinations in history, with the report made by this Conference to the New England Association of Colleges and Preparatory Schools and amended by that Association, sees no essential differences between the two reports, and cordially approves the scheme proposed by the New York Conference.

Voted, That this Conference urges upon the Colleges the desirability of conforming their requirements to the New York report as soon as possible, they having been already accepted by Cornell University, by the University of Pennsylvania, by Tufts College, and by Harvard University provisionally.

Voted, That an examination of the requirements which the Harvard Faculty provisionally adopted January 20, 1897, shows that it adheres in all essential respects to the New York report, the changes being chiefly in phraseology and details.

This Conference consisted of the following persons: Professor Katharine Coman of Wellesley, Miss Anna Boynton Thompson of Thayer Academy, Professor Albert Bushnell Hart of Harvard, Professor Edwin A. Start of Tufts, and Principal Ray Greene Huling of Cambridge as chairman.

The second annual meeting of the North Central Association of Colleges and Secondary Schools developed one innovation that is most commendable and that should be imitated. Where discussion was to be had, the topic was stated in the form of a parliamentary resolution, and at the conclusion of the debate the question was put. In the hands of a competent chairman this device might become a most effective influence in improving the character of many educational meetings.

The Chicago *Times-Herald* is responsible for the following story of a Kansas school district:

"I know of one school district in which the land is mainly owned by non-residents and where the actual voting population has been reduced to one family—a man, his wife, and two grown sons. These four voters levy the school tax and elect a school board, consisting of the father, mother, and one grown son. This board employs the other grown son as teacher at fifty dollars a month, and the only scholar is the small boy of the family. The popular sentiment for free education is strong in that district."

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The New York legislature of 1897 consisted of 50 senators and 150 assemblymen. On one issue, in which the whole educational force of the State was on one side and only the Government and the Government's son on the other, education commanded 7 votes in the Senate (Messrs. Brackett, Brush, Chahoon, Pavey, Stewart, White, and Wray) and 7 in the Assembly (Messrs. Hobbie, Laimbeer, Mathewson, Sanger, J. J. Sullivan, T. P. Sullivan, and Sweet): politics got all the rest. The issue in question was the revolutionary and unnecessary bill to incorporate the New York Law School, with full power to confer degrees, as described in this REVIEW for April. Governor Black signed this bill on April 19, and the Government and the Government's son have thus had the pleasure of using their short-lived power to undermine the educational system of the State of New York. The State has now an opportunity to enjoy what one Senator who voted for the bill said it ought to have; namely, "at least one 'soft snap' law school."

The newspapers report the summary removal, for political reasons only, of President George T. Fairchild of the Kansas State Agricultural College, together with fourteen of his colleagues. If this charge should prove to be true it would be a blot on the good name of Kansas that will not soon be removed. A far higher type of civilization is shown in Pennsylvania, a State in which party feeling runs very high, where Governor Hastings has reappointed State Superintendent Schaeffer for another term of four years. The American people have got to teach the spoils-hunting politicians some pretty severe lessons before the divorce between education and politics will be complete.

The School Committee of Holyoke, Mass., has passed the following rule, which is worthy of widespread imitation:

> The superintendent shall be the head of the schools, and, as such, shall have a voice in the councils of the board and of the various committees. He shall nominate his assistants and the teachers, make all assignments and transfers of teachers, and have entire charge of the classification, examination, and promotion of pupils.